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LECTURES ON SURGERY, MEDICAL AND OPERATIVE,

DELIVERED AT

St. Bartholomew's Hospital;

BY MR. LAWRENCE.

LECTURE XLII.

Vascular System continued. — Wounded Arteries, and the application of Ligatures, Compression, etc., renewed.—Aneurism.

WE are sometimes obliged to employ the *needle* and *ligature* in order to arrest arterial hæmorrhage. When the bleeding vessel is small and deeply seated, or when, from any other circumstance, we find a great difficulty in securing the very orifice itself, in such cases we take a large needle, a curved needle, armed with a strong ligature, and pass it through, so as to include the parts immediately embracing the vessels that are divided; we then tie the whole together. Now, this must be regarded as rather a coarse kind of proceeding: indeed it is only to be understood as an occasional expedient when we cannot succeed in what should be our constant effort, that of securing the immediate orifice of the vessel whence the hæmorrhage proceeds.

When an artery is divided, particularly in the extremities, it is generally necessary, or at all events, it may be said to be proper, to tie both ends of the wounded vessel. Frequently we find that bleeding takes place both from that extremity of the vessel which is nearest to the heart, and from that which is the most remote. In the arm and forearm, where the arterial ramifications are particularly free, we find this to take place almost invariably; and also in the scalp, when the temporal artery is wounded we find that the vessel will bleed as freely from the orifice, the most remote from the heart, as from that nearest to it. Under these circumstances it is a matter of obvious necessity to tie both ends of the wounded vessel; but it may be laid down to you as a general rule, that you ought to tie both ends although no bleeding should take place at the farthest opening when you are tying the artery; for though no bleeding may be present at that moment from the most extreme orifice, it not unfrequently happens when the circulation recovers, that bleeding occurs from the distal orifice, and thence hæmorrhage may ensue that might even prove fatal. I remember an instance of a person brought into this hospital a great many years ago, who had received a very deep wound in the lower arm and on the inside, a little above the elbow; this had occurred in an affray in the street; profuse bleeding took place, he was carried into a house where some neighbouring surgeon went to his assistance, tied an artery, and then sent him here. When he arrived at the hospital he was cold, almost insensible, and a ligature was observed hanging out of the wound. No bleeding then took place; indeed it was necessary to give him wine and brandy, to rally him. The wound was then closed in the ordinary way. The patient soon recovered from the immediate effects of the loss of blood; the wound seemed to be uniting very favourably, and under all circumstances appeared quite as well as we could wish, when, on the sixth day after his admission into the hospital, profuse hæmorrhage issued from the wound; this unfortunately, was not discovered till the morning, having taken place at night; it was found that the man had lost a very large quantity of blood indeed; so much so that it had soaked completely through the bed and ran upon the floor. When the house surgeon saw him in the morning, he opened the wound and found no bleeding whatever. In the course of this examination the ligature which had been applied on some vessel in the first instance, came away; the wound was closed and no bleeding then occurred; but on the following day a profuse hæmorrhage came on, and after that, in fact, the patient died. I examined the body myself. I should observe that he was not a patient of mine, it was long before I was surgeon to the hospital; I examined the body, however, and I found a deep wound that extend-

ed to the bone; it was found that the brachial artery had been divided with the accompanying nerves and veins, and nearly the whole thickness of the biceps muscle. The upper end of the artery nearest the heart, on which no doubt the ligature had been placed, was closed; it contained a coagulum of blood, but the inferior extremity of the artery was open, and there was no doubt that in this case the patient had bled to death from the distal orifice of the wounded artery.

The observations I have now made to you relate to the course which you are to pursue in treating wounds of arteries when the trunk is completely divided transversely; but there may be an imperfect transverse division of the artery, or the artery may be wounded longitudinally, or it may be wounded obliquely. In either of these cases you must follow the same course that I have already mentioned; that is, you must tie the artery above and below the situation of the wound in the vessel. This plan of tying the artery is still more necessary in partial wounds, than in complete divisions of the tube; for the partially wounded artery is placed under less favourable circumstances for effecting the natural cessation of hæmorrhage than the artery that is completely divided: the wounded parts of a partially divided artery cannot retract into the arterial sheath. The orifice of the partially divided artery does not come together circularly so as to close it; and thus we find the retraction and contraction of the completely divided artery, the two circumstances principally contributing to the natural cessation of hæmorrhage, are not existing here. It is true that these partial wounds of an arterial tube, like complete divisions, may in some instances admit of spontaneous cure, particularly if the external wound be small, if effectual compression has been made on the arterial trunk, if the limb has been kept quite at rest, if the patient altogether has remained very quiet, and if a course of treatment has been rigidly pursued calculated to diminish the force of the circulation generally. Under such circumstances, either partial or entire divisions of vessels of considerable size are sometimes spontaneously cured; but such a proceeding is only occasional, we cannot calculate on it; it is not the regular or even the frequent result, and the mere fact that such spontaneous cures occasionally occur, must not induce us to neglect tying the wounded artery, that being indeed the only mode of treatment by which we can place our patient in a state of safety.

In some instances where a small puncture of an artery has been made, such, for example, as the wound in the brachial artery, made by a lancet in bleeding; by compression the wound in the vessel will occasionally close without obliterating the tube; the aperture in the artery heals much in the same way as a wound situated in any of the other textures of the body; but this is a rare occurrence, and, generally speaking, whenever the union of a wound in an artery takes place, even the small wound in the brachial by bleeding, it is accompanied by an obliteration of the vessel in the situation where the wound was inflicted.

The observations, Gentlemen, I have now made to you, relate to those wounds in arteries which are accompanied by free external wounds; when there is a complete exposure of the bleeding vessels, we can find them out, and do what we please with them; but in many instances arteries are wounded deeply by sharp instruments making punctures into them. You have a puncture of a considerable artery where the external orifice of the wound is small, and where that external opening may be situated at a considerable distance from the wound in the blood-vessel. Under such circumstances a profuse rush of blood may take place at the time the injury is received, supposing a large artery has been wounded; but as the blood escapes more slowly, in proportion as the circulation becomes enfeebled by the continuance of the hæmorrhage, the blood at last coagulates in the track of the wound, forming a barrier to any further afflux of the vital fluid; the patient ultimately faints and much less blood is lost than would have flowed if there had been a near and free external aperture. In this way you may have the femoral artery wounded in any part of its course, or even the axillary artery, and yet the patient might not bleed to death; the bleeding is stopped by a natural process before it produces that effect. In the reduced circulation that takes place, and from the fainting, probably, a coagulum may form in the wounded vessel; this stops the bleeding for a while, the patient recovers; the circulation becomes natural; the coagulum is pushed out, and the bleeding recurs again; in one, two, or three days, such hæmorrhages are repeated; and in the end either the surgeon cuts down and secures the wounded vessel, or the patient dies from these repeated losses of blood. Sometimes the bleeding from the wounded artery is checked for a time either by a coagulum forming within the tube, or by a coagulum placed in the track of the wound external to the artery. In the last case the wound may heal, may become quite united and healed, yet the artery may go on bleeding internally; blood is effused into the cellular sheath of the vessel, and distends it; the blood is also injected by the wounded artery into the cellular substance immediately surrounding that vessel and its sheath; blood becomes in-

jected into the cellular substance between the contiguous muscles, and thus tumefaction arises, first in the neighbourhood of the wounded vessel, and then extends more or less to the soft parts around it, often increasing the size of the limb to a very considerable magnitude. In this latter case, the swelling I should observe, particularly in the immediate situation of the wounded artery, pulsates. This is that description of swelling which is technically called *diffused false aneurism*. The tumour that takes place here, although it pulsates, is not circumscribed: it is formed by an irregular injection of blood into the cellular texture which immediately surrounds the artery, and also into the contiguous parts; thus the swelling is diffused; it has the the name, therefore, not of "circumscribed" but of "diffused" false aneurism. Should the flow of blood continue, nearly the whole of the loose cellular texture of the limb may eventually become distended by the injection from a wounded artery, and in many instances the tumefaction is very marked. The course of proceeding in any of these cases is just the same with that which I have mentioned to you as fit to be adopted in instances of a complete transverse division of an artery and an open external wound. You must find out the injured vessel and secure it by ligature; for unless you do this the patient will continue in a most dangerous situation, and the surgeon too must necessarily feel the greatest anxiety and alarm for the safety of such patient. It is important that you should apply your ligatures as early as possible, if hæmorrhage still continue from the wound; for bleeding of even a short duration, or a very few repetitions of it from a large vessel, such for example as the femoral artery, is attended with eminent risk to the life of the patient; and I have just mentioned to you a case in which a person bled to death, even from the inferior orifice of a wound in the brachial artery. If you have to treat diffused false aneurism, the longer you delay the operation, the more difficult it will be found; for, as the swelling becomes more considerable, the relative position of the parts is, of course, much less easily ascertained; you have a greater depth of parts to divide, before you arrive at the wounded vessel; and, in fact, the operation is performed under increased difficulties of every description. There is another source, too, of aggravation, occasioned by delay; in order to prevent the patient's sudden death from hæmorrhage, it is necessary to apply a tourniquet on the upper part of the limb. Now the application of this instrument is attended with very great pain, irritation, and swelling of the limb, below the part where it is placed. Thus all the circumstances attending delay increase the difficulties, and these evils become more and more aggravated the longer the operation is postponed. The wisest plan would be to cut down upon and take up the wounded vessel the moment the accident has happened, if you have the opportunity of doing so; for then the parts are free from distention and inflammation, and you have all the natural guides to lead you at once to the injured artery. The operation of cutting down upon and securing the artery, is, in some of these cases, a very serious, and, indeed, a very difficult one. So that it is necessary for you to be quite clear, before you commence an undertaking of this sort, that you fully understand the character of the injury, and also of the required remedy. If you do not see the patient immediately after the wound has been inflicted, you are obliged, in a great measure, to trust to the reports of others to guide your judgment on very important points, and in this way also your difficulties are increased. In the first place, you would have reason to suppose that an important vessel had been wounded, if a profuse bleeding took place immediately after the accident, and that that vessel is an artery, should the fluid possess the characters of arterial blood. In the next place, should there be a recurrence of free hæmorrhage some time after an accident, or if both of these circumstances occur, there will be no doubt that what has taken place is a wound of some important vessel. You can generally derive some knowledge of the state of the wound, by observing the condition of the vessels of the limb, beyond the part that has been wounded. If the main artery of the limb has been seriously incised, you will probably find the pulsation either suspended, or, at all events, materially altered from its natural condition, in the vessels that are situated beyond the seat of injury.

Then having determined on the nature and situation of the wound in the vessel, having established your diagnosis as far as the circumstances will enable you to decide, having, in fact, come to the conclusion, that an artery is wounded, and that it is necessary to secure the vessel, you proceed to perform the operation by first applying a tourniquet upon the main arterial trunk above the situation of the injury, or by causing the circulation through that tube to be obstructed by pressure made by an assistant. You observe, of course, with the utmost accuracy, the situation of the external wound, and you ascertain, if you possibly can, the *direction* which the instrument that inflicted the wound has taken, and thus you may be led to infer, with some degree of correctness, that part of the artery which has been injured. A free incision must then be made immediately over that situation. You will

soon find the advantage of making a large incision; for, in these cases, much room is wanted, when the artery that is wounded lies pretty deep; so that, unless you make the opening very large at first, you will have to make it larger afterwards, or you will be embarrassed throughout the operation. When you make the incision, supposing it to be a case of diffused false aneurism, you will find, when you cut into the tumour, that you get into a quantity of coagulated blood—recently coagulated blood; and when you have taken that out, and cleaned the wound by means of a sponge, it will very generally be found that the artery is already separated by the injection of blood into the cellular tissue, and probably the orifice will be observed as soon as you relax the compression, or slacken the tourniquet, and you then have no difficulty in tying the open extremity of the vessel. Within the last two years—I think it was about a year and a half ago, a patient was brought into this hospital, who had wounded the femoral artery in the lower part of the thigh; I think it was done by an oyster-knife; he had wounded the artery just where it passed through the tendon of the triceps. This patient lost a large quantity of blood at the time of the accident, and the hæmorrhage returned two or three times while he was in the hospital. After he came here, it was found necessary to make an opening in the thigh, to secure the vessel. It was a deep wound, presenting many difficulties; however, the artery was at last laid bare, and found to have been slit up longitudinally about three quarters of an inch in length. A ligature was applied on the artery above the wound; and after that had been so applied, and the tourniquet loosened, the vessel bled very freely from the lower orifice; of course, from that circumstance, and even otherwise it would have been deemed necessary; but that circumstance showed the necessity of securing the distal opening, which was accordingly done, and the patient did very well. I remember the case of a boy who was brought into the hospital a great many years ago, upon the front and upper part of whose thigh a knife had fallen. A wound of the femoral artery was thus made, from which a large quantity of blood had flowed; it stopped, however, and the wound healed. In that case, a pulsating swelling formed; it was a case, in fact, of diffused false aneurism. The wound here was situated so high up, that the tourniquet could not be applied; so that it was necessary, while performing the operation, to press upon the artery, where it passed over the bone. In laying bare the tumour, and turning out the blood, the artery was found to be pretty well dissected by the injection of blood into the neighbouring cellular tissue; in this instance, also, it was found necessary to apply two ligatures. Here, then, is the course of conduct you are to pursue, in cases of this description.

In some injuries the exact situation of the wounded vessel is uncertain. An artery is, perhaps, cut in a part of the limb where it may be very deeply situated, and the surgeon might experience very great difficulty in exposing and securing it; hence he is led to inquire, whether the end might not be better attained by taking up the main artery of the limb higher up, in some situation where it is easy of access? If the popliteal artery was wounded, you might suppose that the femoral artery might be secured with equal safety and effect, in the situation where it is generally tied for aneurism, in the ham. Now when the artery is thus secured, the hæmorrhage from the wound in the one case, and the pulsation of the aneurism in the other, are occasionally stopped for a time, and, in some instances, permanently. But the bleeding generally recurs after a shorter or longer period of time; and this shows the propriety, if not the necessity, of securing the vessel in the place where it has actually been wounded. I remember an instructive case which happened a great many years ago in this hospital. A woman received a piece of glass into the front of her forearm, a part of it stuck in the arm, and very free bleeding took place from the wound at the time of the accident; the edges of the incision, however, were brought together, pressure was applied, and the part seemed to heal over. There was a kind of scab formed over the wound, which scab had given way twice, and profuse bleeding of an arterial character as far as could be calculated upon, had taken place on each of those occasions. This woman came to the hospital at the end of three weeks from the occurrence of the accident; and this was the account she gave of the case; that there had been profuse bleeding at the time of the accident, and two recurrences of it. When she came to the hospital, there was considerable swelling of the under part of the fore-arm, and this, in the immediate situation of the wound, pulsated. After she had been a short time in the hospital, the surface of the wound gave way, and another free arterial hæmorrhage took place. Now, in considering the circumstances of this case, it was quite doubtful what artery was divided; whether the radial or interosseal; it was, therefore, deemed necessary to tie the brachial. It was tied with two ligatures, and divided in the middle. This operation was followed by a cessation of the hæmorrhage; but, soon afterwards, the pulse had returned at the wrist, and a slight pulsation was perceived in the tumour. The patient was kept very quiet, and all the usual means were adopted calculated

to lessen the force of the circulation. On the eighth day after the operation, the original wound again gave way, and free arterial hæmorrhage followed. This showed the necessity of cutting down into the wound, and securing the bleeding vessel. A tourniquet having been applied, an incision was made into the part. After removing some grumous blood, the radial artery was found to be divided, to about half its extent; and when the tourniquet was slackened, a free stream flowed from each direction, from the opening nearest to the heart, and from the one that was the most distant. A ligature having been applied, both above and below, the artery was then completely divided between them: the result was completely successful.

A soldier, at the battle of Albuera, received a wound in the thick part of the leg. The bullet entered at the posterior part of the calf, and came out at the outer side of the tibia, having passed between the bones. Very free bleeding took place at the instant. This occurred on the 16th of May; on the 15th of June hæmorrhage, to a very considerable extent, of arterial character, flowed from the wound; and as the precise situation of the wound in the artery was quite doubtful, and as the bullet had passed through the thick part of the calf of the leg, the surgeon took up the femoral artery low down in the limb, just above where it passes through the tendon of the triceps. That arrested the hæmorrhage for the time; but in about three or four days, arterial hæmorrhage came on again, which occasioned amputation of the thigh to be performed. Upon dissecting the limb it was ascertained that the *anterior tibial* artery was the vessel that had been wounded, and from which the bleeding had taken place. These facts show you that you cannot trust, in wounds of the arteries, to ligatures placed upon trunks above the seats of injury. The freedom of the circulation in all parts of the body is so great, that hæmorrhage will take place from a distant part of a limb, though you might tie the main arterial trunk supplying that limb. Hence it becomes necessary, in all cases where it is practicable, to cut down upon and secure the artery in the situation where the wound has been received.

Aneurism.—I next proceed to speak to you of *aneurisms*. Aneurism is a tumour generally attended by pulsation; and is formed by a general or a partial dilatation of an artery, or in consequence of a wound, rupture, or ulceration of some part of the coats of an artery. The tumour which composes an aneurism is filled, during life, with blood, either in a fluid or in a coagulated state. The cavity of the tumour is continuous with the cavity of the artery by which it is formed; indeed, the sides of the tumour itself, consist either entirely, or at all events in part, of an expansion or continuation of the proper tunics of the artery. This bag, then, thus formed, constitutes what we call the *sac* of an aneurism; in fact it is the aneurism itself; but we speak frequently of the aneurismal tumour, or the aneurismal sac; meaning, by the aneurismal sac, that portion of the swelling which is formed either by the dilated, or ruptured portions of the coats of the artery. There is a free communication between the tube of the affected artery, and the aneurismal sac; and that communication either consists of a single opening, which may be circular or oval or oblique, or it consists of two openings; that is, the artery proceeding from the heart, opens into the aneurismal bag at one point, and then again, at some distant point from that, there is an opening, leading to a continuation of the arterial trunk, farther on in the limb. I now show you a specimen of an opening, a single opening, measuring about an inch in its oval diameter. Here is another specimen of an aneurism, where there were two openings; this is an aneurism of the subclavian and axillary arteries: in the upper part of the aneurism there is one opening, and lower down there is another, there being a considerable interval between the two.

The general doctrine respecting aneurisms has been, that there are two kinds of the disease, one consisting of an uniform dilatation of the coats of the artery, and the other of a partial enlargement of those coats, or rather of a rupture or giving way of a portion of the coats, so that the aneurismal sac is formed only in part by the tunics, the rest of it being composed of the cellular sheath of the artery, or of some other surrounding parts. These two kinds have been distinguished by the terms *true*, and *false* or *spurious*; the true having been considered that which is composed of the uniform and general dilatation of the coats of the artery; the false, or spurious, that which is produced by a partial giving way of the coats. The propriety of this ancient division of aneurisms, has been called in question by Scarpa, who has endeavoured to show, that there is, in fact, no such thing as a true aneurism, but that all aneurisms are false; that is, that they consist in a partial ulceration or giving way of the coats of an artery, in consequence of which, the blood comes into contact with the cellular sheath of the vessel, distends it, and by its enlargement and ultimately giving way, the blood comes into contact with various parts, which then form the aneurismal sac. The accurate investigation into the nature and origin of aneurism, which has followed in consequence of the promulgation of this opinion by Scarpa,

has tended to show, that the ancient opinion was the correct one, namely, that there are general dilatations of the coats of the artery, and also certainly, that a very great proportion of the aneurisms consists of what, according to the ancients, would be called false or spurious, that is, formed by ulceration, and the partial giving way of some parts of the tunics.

A true aneurism is, in fact, a dilated artery; and such aneurisms are chiefly seen in the course of the larger vessels, principally in the aorta, and they may take place there to a very considerable extent, as this preparation evinces. What I now show you is a very large aneurismal sac, measuring some inches in diameter; and this is formed by a general dilatation of the coats of the artery, so that when examined, you will find that it consists of the three proper tunics of the artery—the cellular, the fibrous, or middle, and the internal coat. And in these aneurisms, when the arteries are thus dilated, we find that the arterial tunics are diseased; that is, they become preternaturally thickened, and on the internal coat there are osseous depositions often found, so that true aneurism is not always a mere dilatation, but a dilatation accompanied by an important diseased alteration. The specimen I now show you is an aneurism of the aorta, consisting of simple dilatation of the tube. Here is another not quite so large, in which you see the arch of the aorta dilated.

The great majority of aneurisms, however, and particularly those we have to operate upon, that is, in those that are situated in arteries of the second magnitude—in the principal branches of the aorta, for instance, are aneurisms of the false or spurious kind, according to the ancient divisions. Scarpa states, that they are formed by partial ulceration of the internal and middle tunics of the artery, that those coats become ulcerated or destroyed at a certain point, and that the blood passes through the opening which is made by such ulceration, and then dilates the external or cellular coat of the artery into an aneurismal sac or swelling. There is a specimen here, which seems to have undergone that process. You see there is a small swelling found here upon the abdominal aorta; and there is a little round opening, showing where the coats have given way, and through which the blood passed, distending the external or cellular coat. This is arriving very near to the description Scarpa has given of an aneurism in this early state. It is very uncommon to meet with any examples illustrating these early states of aneurism, and that is a point of the case in which Scarpa is defective in his evidence. We have an abundance of examples to illustrate the structure of aneurisms when they have attained some size; but Scarpa does not give any cases or representations by figures, to show the incipient stages; that is, those in which the two internal coats are ulcerated, and the blood is making its way to the external coat. This point, therefore, must be considered at present as rather conjectural, not yet made out in a satisfactory way by actual dissection. Now we know, on the contrary, that the aneurism of which I am speaking may form, by a partial dilatation, including all the three coats of the artery, and we meet not uncommonly with such partial dilatations of an arterial tube. We sometimes see a small aneurism, which consists of a smooth pouch, or tumour, formed on the artery, in which we can trace all the three component parts of the artery—in which we can see there has been no actual ulceration or giving way of the middle and internal tunics, but in which we discern, as the commencement of the affection, a uniform dilatation, or distention of the three arterial tunics. When this distention has gone on to a certain point, the internal and middle coats of the artery do not seem to admit of further enlargement; they then yield to the ulcerative process, and thus the cellular sheath of the artery becomes exposed, that is, the blood comes in contact with it. The cellular sheath of the artery then forms the pouch of the aneurismal swelling; this distends and gives way to a certain extent, and then in proportion as the aneurism increases, the neighbouring blood-vessels, nerves, or muscles, become involved in the progress of the aneurismal tumour, and form parts of it. Thus, in the case of spurious aneurism, the tumour may rather be said to be a swelling formed *upon* an artery, than to be a swelling *of* or *in* an artery. We may find an artery in three-fourths of its circumference quite sound, but of the remaining fourth a portion has given way—an opening is formed, leading to a sac filled with blood. The specimen I have just shown you illustrates that point. If you look accurately at it, you will find that there is an opening from the artery, and that the tumour is formed immediately upon and around that opening. This is by no means a general dilatation of the artery, it is a swelling formed on one side of the artery; it extends like a kind of knot upon it. There is a figure here of the aneurism which was drawn from the very preparation which is now upon the table, and by looking at it, you will see that the opening is less than an inch, leading from the artery into this swelling, or knot; that the tumour is formed as a swelling upon the tube, the main tube being not at all interrupted by it. That is the nature and appearance of a false aneurism formed upon a large arterial trunk. Here is a small one upon the descending aorta, somewhat analogous to the

one I have already shown to you. There is an opening on one side, and the other side is perfectly sound; this is very different from the general aneurisms of the whole tube. Here you have also a view of an incipient dilatation—the early stage of true aneurism.

Now, you will observe, from these preparations, that the sac of an aneurism is differently formed in the different species of the complaint. In the true aneurism, the sac is in fact composed of the regular arterial tunics; but in the spurious aneurism, it is found that we can only trace the arterial tunics from the healthy tube through the opening into the mouth of the sac; further, that, perhaps, for the space of an inch, or an inch and a half, from the site of the arterial opening and healthy coats, there is in the sac the smooth internal lining, but after that you come to a bag which terminates in an irregular, broken, ragged edge, and from that part the sac is formed by a condensation of the cellular tissue, in which the aneurism is developed, the neighbouring nerves, or muscles, or vessels, being also involved, for the cellular membrane, which becomes successively involved in an aneurismal swelling, undergoes the same sort of change which the cellular substance does in the neighbourhood of a phlegmonous swelling. Adhesion and deposition take place, so that it forms a firm, compact substance, which confines the blood; in the same way it becomes strong and resisting by condensation; thus vessels, nerves, and other parts that are occasionally involved, assist for a time in checking the progress of the aneurismal tumour. There are, however, hardly any limits to the extent of the swelling in the case of spurious aneurism, because if there is an abundance of loose cellular substance the blood rapidly distends it; and should the aneurismal tumour come in contact with the bone, it produces absorption of that bone. Thus, in the case of an aneurism of the aorta, when the sac presses upon the bone, it makes its way through the sternum, through the ribs, or even through the bodies of the vertebræ.—Here is a specimen of an aneurism of the aorta, which springs from the anterior part of its arch; it has proceeded forwards to the sternum, it has come through the sternum, and this, which is part of its sac externally to the sternum, of course was not originally part of the tunics, for it cannot be supposed that any part of the original tunics of the arch of the aorta would extend so as to reach the outside of the sternum; it must be part of the cellular substance of which the aneurismal sac is composed, or made up, in its progress. In the same way you may have aneurism of the aorta, extending through the ribs to the back, so that there is hardly any limit to their extension. The size to which these spurious aneurisms may extend, and the length of time that may occur before they give way, depend, therefore, upon the nature of the parts in which they are formed—depend, too, upon the quantity of cellular substance that is around the artery, and upon the great or trifling resistance which is opposed to the extension of the sac. An aneurism will sometimes form in the aorta within the cavity of the pericardium, in that part of the vessel which is covered by the pericardium. There is merely the pericardium externally, and a little cellular substance which connects the pericardium to the arterial tube; such an aneurism will proceed till it has, perhaps, attained the size of a hazelnut, or, at the largest, a walnut; while in the abdominal aorta you may have aneurism capable of containing two or three or more pints of blood.

Inasmuch as the blood which is seated in an aneurismal tumour is out of the direct course of the circulation—inasmuch as it is not constantly moving through the vessel in the way that the blood usually does, it has a tendency to coagulate in the aneurismal sac. We find, in fact, when the aneurism has attained even a moderate size, that the fibrin of the blood is separated, and forms a thick stratum, lining the internal surface of the aneurismal sac; the fibrin is separated from the mass of the blood, that is, the stratum which lines the aneurismal sac is of a greyish, or light-brown colour, consisting of coagulated blood, without the red particles. The fibrin is deposited in successive strata, and thus the cavity of the aneurism becomes lined by numerous successive layers of the fibrin, adhering, in the first instance, to the sac of the aneurism, then to each other as they are deposited. These are called *laminated coagula* of an aneurism, because when you open an aneurismal tumour after death, you find, besides this, that the rest of the aneurism contains a large quantity of recently clotted blood; that is, the blood that may have been in the aneurism in a fluid state at the time of death clots, and is like a recent clot when examined; but that is quite a distinct thing from the tough, yellowish, or light-brownish strata of fibrin which line the sac of the aneurism closely adhering to its surface and to each other. This, which I now present, is a specimen of such laminated coagula, taken out of an aneurism after death. Where it is cut through, you perceive that it consists of a number of layers like pieces of paper. Here is another specimen of a very large mass; the recently coagulated blood comes away easily, we can wash it out, but this laminated form adheres to the sac

closely, and we cannot get rid of it without using considerable force.

I have been surprised to find, that these laminated coagula found in aneurism are sometimes spoken of as if they were actually coagulable lymph, which had been secreted by the vessels of the sac itself. There is, in my opinion, not the slightest ground for such an opinion; the thing seems to me perfectly clear, that they are portions of the fibrin of the blood, separated from the blood that circulates through the arterial tube, which gains admission to the sac of the aneurism through the opening in the artery. These are not organised, though they are tolerably firm; they adhere to the sides of the sac, but there is no pretence for saying they are composed of coagulable lymph secreted from the sides of the sac itself. We have no evidence for saying that the blood thus deposited in the interior of an aneurismal sac will undergo the process of organisation.

Now the natural progress of an aneurismal tumour is to become larger and larger, at the same time that it gradually advances towards the surface of the body; like a collection of matter in the cellular substance, it elevates the skin, forms an external tumour, and the side of the cavity becomes thinner and thinner, until the swelling at last bursts. Although laminated coagula may have been deposited in various parts of the sac, we do not find them at the point of the aneurismal tumour which advances to the surface of the body. When the side of the sac nearest the surface has become very thin, the swelling ultimately gives way, and that takes place under different circumstances. Very commonly the integument is rendered very thin; the most prominent point loses its vitality, and sloughs, and when it does, free hæmorrhage ensues, and the patient either dies at once, or the hæmorrhage is stopped for a time; but repeated hæmorrhage takes place, and the patient at last sinks. Sometimes the integument, instead of sloughing, ulcerates and the aneurismal swelling thus gives way; or sometimes, particularly in cases of *internal* aneurism, they give way by actual rupture or bursting. I have alluded to the case of small aneurisms forming on the aorta within the cavity of the pericardium. Where I have seen them, these had actually given way by rupture; an actual tear or break in them is found after death, just as if you had lacerated the part by force. Now, there is sometimes a bursting of an aneurism into the cellular substance, thus converting a circumscribed into a diffused aneurism; the tumour in these cases is, perhaps, ruptured in consequence of some violent effort; the patient feels a something give way, and immediately afterwards there is seen an immense increase in the size of the swelling. I have seen this take place sometimes in the bend of the thigh at the groin, and in the axilla. I have occasionally seen it also occur in the ham; and when such aneurisms have been examined after death, the portion of the tumour immediately connected with the artery has been composed of a continuation of the arterial tunics; the remainder of the sac of condensed cellular membrane and the other surrounding parts; the vessels, nerves, and muscles, in these cases, have not been at all altered; the sac has burst, and the adjacent parts have received the blood. This is an event by which an immense accession takes place to the size of the aneurismal tumour.

Respecting the treatment of aneurisms and some other matters, these must form the subjects of our next lecture.

Lecture XLIII.

Vascular System continued.—Aneurisms resumed.

This, Gentlemen, is a specimen taken from the museum, showing aneurism of the aorta, situated just above the semi-lunar valves, and when aneurisms occur in that part of the aorta they cannot increase much, as they have but little cellular membrane, and merely the serous lining of the pericardium covering them. This is a specimen of one, perhaps of the size of an orange, which burst into the pericardium.

I described to you, Gentlemen, in the last lecture, the origin, the increase of aneurisms, and their progress towards a fatal termination. Now, aneurisms do not always end thus unfavourably, on the contrary, they admit of cure in some instances by natural means, in some instances by artificial. The deposition of the fibrin of the blood, which I have already had occasion to advert to, as taking place more or less generally when an aneurismal tumour has been formed, proceeds sometimes till it completely fills up the cavity of the aneurism, so that the aneurismal tumour is converted into a solid swelling, and the passage of the blood into it is completely obstructed. Thus the ingress of the blood from the artery into the aneurism, is entirely prevented, and that force by which the aneurismal tumour would increase if it acted upon the internal surface of the sac, is completely diverted. Under such circumstances the aneurismal bag contracts, the fibrin that has been deposited in it becomes absorbed, and this process goes on until the coagulum, by which the passage of the blood into the sac has been obstructed, is entirely removed, the sac becomes solidified, and the artery itself is reduced to a solid fibrous cord. In this way the aneurism is cured by the natural

obliteration of that part of the artery which has been the seat of disease. You have already seen that the tumour which constitutes false aneurism is situated at least, at first, *upon* the trunk of the artery. Now, if the situation of the parts around the arterial trunk be such as to limit and prevent the natural extension of the tumour externally, the tumour may be developed along the course of the artery in a direction either upwards or downwards, so that a considerable portion of the tumour will actually lie upon the arterial trunk, either upon that portion which is immediately the origin of the aneurism, or that portion which is immediately above or below it. Under such circumstances, if the external parts continue to press upon the tumour, so as to prevent the swelling from appearing externally, and the tumour presses forcibly on the artery; hence the pressure of the tumour itself, may bring together and keep in contact the sides of the artery, either above or below the aneurism, and thus lead to the obliteration of the vessel, either in the one or in the other of these directions. I remember examining the body of a person who had died from an aneurism, or rather in consequence of an aneurism seated in the external iliac and femoral artery; and in that instance the pressure of the tumour had produced a consolidation of the lower portion of the arterial tube to the extent of two or three inches, immediately contiguous to the part that was the seat of disease. It must be obvious, therefore, in this case, that if the pressure had been above instead of at the inferior part of the diseased portion of the artery, the consolidation would have produced a permanent cure. There is a third way in which aneurism is cured by a natural process, and that is by inflammation followed by sloughing of the aneurismal sac. I have already mentioned to you that the most prominent point of the aneurismal tumour will inflame and slough when the integument has become very thin, and in that way the swelling will break externally; I am not now, however, speaking of that slight inflammation, but of very considerable inflammatory action, attended with sloughing of an extensive portion of the sac, and such inflammation is accompanied with a high degree of local disturbance, great redness, heat, and pain, with considerable febrile derangement of the system generally. Matter will form in the sac, the integuments covering it, and the external portion of the sac, will slough; and while those changes are going on, the blood congulates in the aneurismal tumour, and it also congulates in that part of the arterial trunk which communicates with the bag of the aneurism. You might at first expect that sloughing of the aneurismal sac would lead to fatal hæmorrhage as soon as the slough gives way; but you should remember that in this case the same circumstance occurs, as in sloughing of a considerable portion of other soft parts under other circumstances, namely, that before the parts actually perish, there is a congulation of blood in a considerable portion of the vessels extending much higher than the seat of the parts involved in the disease. This occurrence of inflammation and sloughing, of an aneurismal sac, has the effect of not only preventing hæmorrhage, but also of leading, subsequently, if the strength of the patient shall be capable of supporting him through such a very serious process, to its final termination and complete cure. These, then, are the three ways in which aneurisms may be cured spontaneously, in which they may be cured by natural process—by changes that take place in them, independently of any interference of medical or surgical treatment;—the increase of the deposition of the fibrin of the blood in the aneurismal sac, and the gradual filling up and obstruction of the sac; the obliteration by pressure upon the trunk of the artery communicating with the sac; by the inflammation and sloughing of the aneurismal sac, and the congulation of blood in the arterial trunk situated in the immediate vicinity of the disease.

When aneurisms are cured by any of these natural processes, the arterial trunk in which the disease has been situated, is found upon examination after death to be obliterated; that is, the trunk is shrunk up, it is converted into a solid fibrous cord, the artery is no longer pervious; and this process of obliteration extends in each direction as far as the first collateral branches, sometimes for the space of two or more inches. I remember the case of a patient in this hospital many years ago, who had a large aneurism of the axillary artery. That patient said he had had a similar tumour or one rather smaller in the axillary artery of the opposite side; he described very accurately the characters of the tumour, and there could be no doubt of the fact of its having been an aneurism. He died in consequence of the first tumour I have mentioned, and that gave me an opportunity of examining the artery on the opposite side; I found the axillary artery, on the side in which the patient said there had been a pulsating tumour previously, reduced for the space of two or three inches to an impervious cord, while upon one part of the cord which had probably been the aneurismal tumour there was a solid knot, of nearly the size of my thumb. About a year and a half ago there was a person under my care in this hospital with a very large aneurism of the external iliac and femoral arteries; here also there was a spontaneous cure, and that person is now well and going

about his ordinary employment. This case I shall mention again presently in illustration of another important fact.

I mentioned to you, that when aneurisms are cured in this way, the arterial tube is obliterated; but perhaps we are not quite authorised in absolutely making that statement. It is probable that in aneurism of the aorta, where the tube is very large, and where the coats of the sac may be very thin, that the passage of the blood into the aneurism may become obstructed, and that the aneurism may admit of a spontaneous cure without the tube of the artery being obliterated; and I apprehend, that the specimen which I now show you is a case of that kind. This is the aorta; the aneurism has been cut in two: it is a small tumour, about the size of a very large walnut, and it has become filled by laminated coagula. The orifice of the aneurismal sac by which the bag formerly communicated with the artery, has a smooth surface, so as to show a continuance into the sac of the internal coat of the vessel. Here is another instance of the same process, and though there is still a considerable portion of the cavity remaining, yet a large quantity of laminated coagulum is deposited.

Symptoms.—The symptoms of aneurism are different, according as the affection is situated in an external or in an internal artery. By *internal* aneurisms, I mean those of the aorta and of the arteria innominata, which are developed either within the cavity of the chest or of the abdomen, and which may proceed to a large size, without showing themselves at all externally. By *external* aneurisms, I mean those that are formed on the principal arterial trunks of the upper and lower extremities, or of the neck—the carotid. An external aneurism consists of a firm pulsating tumour, situated in the course of one of the arteries I have just mentioned, and inseparably connected with such arterial trunk. I say that an aneurism is a firm pulsating tumour. In the early stage of the disease, the tumour admits, in some degree, of diminution by compression: it is filled with fluid, but that blood has not begun to coagulate, therefore you find it yields to the pressure of the finger, so that you can diminish its size by that means. Pressure on the trunk of the artery between the aneurismal tumour and the heart, puts a stop to the pulsation, and renders the tumour in its early state sometimes soft and flaccid; on the contrary, pressure on the trunk of the artery below the aneurismal tumour, renders it rather more tense, and occasions it to be fully distended by blood. In proportion as the aneurism becomes larger, and in proportion as the laminated coagula are deposited on its sides, the tumour loses that soft compressible character observable in its early stage, and becomes altogether a firm unyielding swelling. The disease of the arterial trunk interrupts or interferes with the passage of the general current of blood through the artery, and consequently with the distribution of the blood in the various vessels beyond the seat of disease; thus you very commonly find, that the pulse is either entirely suspended or considerably weakened in those vessels situated on the distal side of the aneurismal tumour. In cases of aneurism of the femoral or of the popliteal artery, for example, you probably will not be able to feel the pulsation of the anterior or posterior tibial arteries, while that of those vessels in the opposite limb can be felt very plainly. The aneurismal tumour being in a large arterial trunk, which is usually accompanied by some of the nerves of the extremity to which it belongs, the development of the tumour often interferes with the functions of those nerves, and produces very considerable pain, either in the immediate seat of the swelling, or shooting along the limb in all directions; and this pain, in some instances, is extremely severe. The pressure of the tumour upon the absorbent vessels and veins occasions considerable swelling below the seat of disease; œdematous tumefaction, and sometimes a firmer swelling; and these circumstances, taken altogether, generally impair very considerably the movements of the affected limb; the patient cannot perform the ordinary motions of the limb, or, at least, cannot perform them without very great pain. Such, then, are the leading circumstances that characterise an aneurismal swelling, when it is situated on one of the external arteries of the body.

Now the mere existence of pulsation, does not of itself essentially characterise an aneurismal tumour; so that you cannot conclude from that circumstance alone that it is an aneurism. A solid tumour, situated over a large artery, will receive a pulsation from that artery. You know, that if you place one knee over another, as you are sitting, that the impulse of the blood through the popliteal artery against the knee rested upon, will move and even raise up the whole of the supported limb: this you can see very obviously. You may easily suppose, therefore, that if a swelling were situated between that artery and the skin, that the impulse of the blood would raise, move, or communicate a feeling of pulsation to it. In the same way a tumour may form in the neck, and receive a sensation of pulsation communicated from the carotid artery. I have seen a swelling which pulsated, and which was attended with an interruption of the pulsation in the arteries beyond the tumour, which, nevertheless, was not an aneu-

rism. I had occasion, in a former lecture, to mention to you a case of fungus hæmatodes, where the tumour was developed in the head of the tibia. Now that tumour projected just where the popliteal artery divides into the anterior and posterior tibial arteries; and it was seated just below the strong fascia which binds down the muscles. The parts being thus tightly bound down, pressed forcibly the tumour on the arterial trunk, and the effect was such as to prevent our feeling any pulsation in the anterior and posterior tibial arteries, or in the arteries of the foot; the anterior and posterior tibial arteries of the opposite extremity possessed their natural pulsation. From these circumstances we were led to suppose at first, that the tumour was an aneurism; however, it at last made its way through the fascia, and the pulsation then returned in the anterior and posterior tibial arteries; and the swelling not then pressing so immediately on the trunk of the artery, lost the pulsation that had previously characterised it. When a tumour pulsates in consequence of being situated upon an arterial trunk, the pulsation consists in a rising and sinking of the general mass of the swelling; but in an aneurism, if you were to *grasp* the tumour, you would feel that it *distends* with each pulsation. You would have a sort of feeling communicated to the hand, as if fluid were injected into the swelling—it would seem to increase with each throw of blood from the heart; the pulsation of an aneurism is, therefore, very different from the feeling communicated by a solid tumour placed over an arterial trunk. Again, another circumstance is to be taken into account in the diagnosis of aneurism and other tumours, namely, that aneurismal tumours do not in *all* cases pulsate. Various changes may take place in the state of the aneurismal sac, which will be attended with a diminution—in fact, a cessation of the pulsation, or the pulsation may be suspended for a time, and return again. Some years ago, a gentleman came to town from the country, and placed himself under my care, in consequence of a swelling in one of the thighs, said to be aneurismal. He was sent to town by a very intelligent practitioner in the country; and when I put my hand on the tumour, I was rather surprised to find that it did not pulsate at all. The tumour was about the middle of the thigh; the limb was swelled, and the general circumstances, in other respects, corresponded accurately with the symptoms of aneurism. I interrogated the patient very minutely, as to the characters that had been observed of the previous state of the tumour; and he described them so distinctly, and the pulsation so clearly, and the period when it diminished, that I could not doubt it was an aneurism; and inasmuch as the pain, and all other circumstances of an aneurismal tumour, were present, I did not hesitate to apply a ligature upon the artery; the operation was followed by a regular diminution of the tumour, and there could be no doubt that it was a case of aneurism. I have had two cases in this hospital, under my care, of aneurism, situated at the bend of the thigh, in which, during a considerable period of the existence of the tumours, no pulsation was detected. The first was the case of a young man who was under the care of my colleague, Dr. Latham, for what was supposed to be rheumatic pain of one of the lower extremities. He had been some time under the care of Dr. Latham, when it was found that he had a considerable firm swelling in the bend of the thigh, and I saw him in consequence. When I examined him, I found a large hard swelling, without any pulsation, situated at the bend of the thigh, which I thought could only be regarded as a very considerable swelling of the glands of that part. There was great pain and swelling of the lower extremity, and he was transferred to me. I again examined him very carefully, but no suspicion existed of its being an aneurism, and measures were adopted, under the suspicion of its being a chronic enlargement of the absorbent glands of the groin. I recollect showing the case to some medical persons; and some foreigners among others, who accidentally saw the case with me, and none of whom entertained a suspicion that it was an aneurism. After he had been some time under my care, the tumour was attacked by inflammation, and I examined it again carefully, in order to ascertain whether anything like matter had formed, as I thought I felt something like a softness; and on inspecting it attentively, I began to think that I perceived a pulsation—and, in fact, at the time I am speaking of, there was a pulsation in the tumour. This pulsation increased considerably, and in a few days the swelling pulsated as strongly as any aneurism I ever saw. The truth is, an attack of violent inflammation came on in the aneurismal sac, from which the pulsation, which had before ceased, was renewed; subsequently it was deemed proper to tie the external iliac artery, which I did in this case; but in consequence of the inflammation, which had already gone to a considerable extent in the sac of the aneurism, the patient died, although the operation, so far as securing the obliteration of the sac was concerned, was successful. The fatal event gave me an opportunity of examining the case, and I found the inferior extremity of the artery obliterated in the way I have mentioned by pressure of the aneurismal tumour, so that possibly the pressure of the aneurismal tu-

mour might have gone on to a cure, in consequence of the obliteration of the lower extremity of the artery, if this attack of inflammation had not come on. The other case was that of a swelling in the same situation, and as it was an instance in which spontaneous cure of the aneurism took place, and as it presented certain interesting facts, I made a few minutes, which I will read to you:—"This patient was thirty years of age, and of late had been employed as a a porter. He observed about last Christmas (1827) a lump in the bend of the right thigh, which he could not ascribe to any strain, blow, or other injury. This proceeded, and gradually increased without pain, but in a few weeks it caused general swelling and stiffness of the limb, which circumstance had confined him to bed seven weeks previously to the middle of April, when he was received into the hospital. At this time the bend of the thigh was occupied by a large and firm general swelling, without any definite boundary, and extending about three inches below the crural arch. It passed upwards to within two inches of the navel, and it was felt through the abdominal parietes as a firm circumscribed tumour, equal to a large fist. The whole lower extremity was swelled, and somewhat œdematous; the hip-joint rigid, and the thigh half bent. The patient was sallow and emaciated, and at this time he suffered much from pain in the swelling and limb, and from want of rest. There was no pulsation in the tumour, nor had there been any during its progress—at least the patient had observed none; and a well-informed surgeon, who had examined it while it was small, prescribed rest and some simple medicine, assuring the man that it would soon go away. These circumstances made me feel quite uncertain as to the nature of the swelling; however, remembering an instance of 'indolent tumour in the groin'—the one which I have just mentioned to you—'without pulsation,' in which strong pulsation afterwards came on, and I had, eventually, occasion to tie the external iliac artery. I examined every circumstance connected with this case with great care, and particularly investigated the condition of the tumour, both by the ear and by the stethoscope." At the time that the first case was under my care, *auscultation* had not come into fashion, and, therefore, no examination of that case was made in that way; but, in the instance I am now alluding to, it was supposed that by putting the ear to the tumour, pulsation might be detected; and, in fact, when I put my ear down to it, I heard the pulsation so distinctly, as if it were the action of the heart itself, though no pulsation could be felt by the application of the hand; with the stethoscope, the pulsation was equally distinct. Indeed, strong pulsation was immediately detected, but quite as plainly by the naked ear as with the instrument. There could now be no doubt respecting the nature of the disease, which soon became still more manifest, as a powerful beating could be felt, and even partially seen in the tumour. It certainly is a curious circumstance, that a tumour in which no pulsation could be detected for so long a time, should pulsate at the time I am alluding to, and so strongly as to be even evident to the sight. "At this time the swelling had increased so much that it nearly reached the navel, the bend of the thigh, and the entire limb, being also enormously swollen. Operation was manifestly inadmissible; tying the aorta was suggested by an eminent surgeon, who accidentally saw the case; but I considered the chance of a spontaneous cure, however slender, preferable to that proceeding. The pulsation in the tumour gradually became feeble, and at last ceased. The aneurismal tumour grew less, and the limb began to mend, the pain ceased, and the health improved remarkably. The patient felt himself, altogether, much better by the end of September." You will recollect that I stated he came into the hospital in April—"that he left the hospital by his own desire. His amendment since has been progressive; the tumour above the crural arch has nearly disappeared, and that below is much less. The thigh is still swollen, the tumour hard, and the hip-joint stiff, but he can walk about well with crutches, and has regained his health, flesh, and good looks." These minutes I made about the mouth of October—I believe in 1828. I saw the patient last in November, 1829, and what I put down then was this—"No trace of the abdominal tumour now exists; the swelling has nearly disappeared at the bend of the thigh, where the integuments and subjacent parts remain hard and consolidated. The lower limb is much reduced in size, and the stiffness of the hip and knee is considerably lessened. Health is perfect."

Now, it appears, in this case, that the aneurismal sac became filled with the laminated coagula, pulsation stopped, subsequently the coagula were observed, and all that remains is a degree of thickening induration and stiffening, in consequence of the great inflammation of the part and the general tumefaction of the limb.

With respect to the symptoms of *internal* aneurisms, so long as they remain within those cavities of the body in which they are first developed, there is no circumstance which characterises their existence sufficiently decisive to enable you to know that they do exist. An aneurism, situated about the arch of the aorta, may interfere with the functions

of the important organs that are in the same situation. The development of a tumour in that part cannot fail, by its pressure on the various important parts seated there, to produce serious symptoms: affections of the breathing, cough, pain, and so forth. A tumour in that situation very soon begins to press on the trachea, upon the œsophagus, and thus it may produce distressing symptoms; but until the tumour makes its way externally, so as to show itself in some part of the parietes of the chest, you cannot be certain that these occurrences depend upon an aneurism. The symptoms, in fact, frequently are of a nature not calculated to give you the least clue to the existence of aneurism. I remember the case of a woman who was brought into the hospital, subject only for a very short time previously to an affection that produced occasional shortness of breathing, amounting, in degree, to impending suffocation. She described these fits as so serious, in three or four instances, that she had actually been afraid she should have died. She stated, that she could not fetch her breath, and, in fact, she led one to suppose that there must be some considerable disorder seated about the larynx or trachea, interfering with the functions of respiration. We were speculating on the probable nature of the disease, and considering what measures should be adopted in case another paroxysm should come on; we were considering whether or not it would be advisable to make an opening into the trachea, to perform tracheotomy, and the opinion seemed to be rather in favour of that operation. Unfortunately the woman had an attack of this kind in the night, when no surgeon was at hand to make the attempt, and she died. I examined the case, and I found an aneurism of the arteria innominata, forming a swelling between the sternum and the vessel, of about the size of a small orange; it pressed upon the trachea, and it had merely slightly indented the anterior part of that tube, so as to make a slight mark on it, but, as I should have supposed, not at all likely to create any difficulty of breathing; in fact, that it did not essentially affect the breathing was clear, from the ease with which she breathed in the intervals of these attacks, but yet spasmodic attacks—at all events attacks which, for want of a better term, we must call *spasmodic*—came on, and created the greatest difficulty of breathing, indeed a difficulty which produced suffocation. You will recollect there is but a small space about the upper part of the chest, in which the arch of the aorta, the trachea, its bifurcation into the two bronchia, and a variety of vessels and nerves, are crowded together, and that is the place in which these aneurisms of the arteria innominata are developed; these aneurisms, therefore, cannot proceed to any very great extent without interfering with the functions of some of these parts; thus it has happened, that aneurism of the arch of the aorta has terminated fatally, by bursting into the trachea or œsophagus. It has been known, that a tumour situated there has broken into the pulmonary artery, and such an aneurism has been developed, without producing any very marked symptoms, sufficient to enable us to determinethat the case was aneurism.

Aneurisms are sometimes produced by obvious and direct external causes. A wound of an artery may produce an aneurism. I have already mentioned to you how the wound of an artery may be attended with effusion of blood into the surrounding cellular texture, and how blood escaping from the arterial tube and getting into the cellular texture surrounding the artery, may then be injected into the cellular texture of a limb extensively, or even generally; and I mentioned to you, that such a case has been called *diffused false aneurism*; but, in fact, it should not be called aneurism at all; it is merely a case of wounded artery, with ecchymosis, or effusion of blood into the cellular texture, and has not any of the characters of aneurism. However, a wound of an aneurism sometimes produces a circumscribed pulsating tumour; the wound of the artery may be partially closed, by coagulation or something else, this slight closure of the wound may give way, and the blood become diffused into a regular aneurismal swelling; it is in this way that aneurism of the brachial artery takes place, in consequence of a wound made in venesection; it is in this way also that an aneurism of the temporal artery sometimes follow arteriotomy, and I have seen aneurism of that artery produced by the bite of a leech. One would suppose, that it must have been a very strong and hardy leech that could have caused an aneurism by its bite. These are called *circumscribed false aneurisms*, and in all respects the nature of the affection and its treatment correspond to what we shall have to state about aneurism generally. Aneurisms sometimes appear to be produced by external violence of different kinds; the patient will say he has had a blow, or that he has met with a strain; that he has been trying to save himself when he slipped, when he perceived something that cracked, or broke, or gave way. In this manner patients frequently account for the occurrence of aneurismal tumour. Certain other external circumstances seem to have some effect in producing them, although we cannot point out the mode. It has been observed, that popliteal aneurism takes place most frequently in those persons who keep their limbs habitually bent, such as postilions, tailors, &c.

With respect to many external aneurisms, and a still greater proportion of internal aneurisms, we should observe, that the causes which lead to them are very obscure indeed; I do not know that we can assign any very satisfactory cause for many of them. We see instances in which aneurism of the aorta arises, and proceeds throughout its whole career destroying the patient, without the surgeon having been aware even of the existence of aneurism. A gentleman returned after having been out riding, and was stooping to take off his boots, when he fell down dead, occasioned by the bursting of an aneurism of the aorta, though he was not aware of the existence of any disease. The causes that produce aneurism, however, whatever they are, seem to act extensively on the arterial system, for we not uncommonly find aneurism existing at one and the same time on several arteries, in the same individual. I have mentioned to you an instance which I knew of aneurism that existed in both axillary arteries; and I think, in nearly the last case of femoral aneurism upon which I operated, there was a small aneurism of the femoral artery on the opposite side. There have been several instances of external aneurism, accompanied by aneurism of the aorta; there have been instances where patients have died of aneurism of the aorta after having had external aneurism cured by operation.

Aneurism occurs more frequently in the larger, than in the smaller arteries of the body. It is most frequent in the aorta and innominata; in the external iliac and femoral; trunks of the brachial and carotids; whilst in the arteries of the 3rd and 4th orders, such as the radial and ulnar, the anterior and posterior tibial, and interosseal, it is extremely rare, and perhaps hardly ever seen in them, except in consequence of a wound, injury, or some external cause. It is much more frequent in the arteries of the lower, than in those of the upper extremities; indeed, it has been said by some, that hardly an instance can be produced of an aneurism occurring even in the axillary artery, which cannot be referred to a wound, or some obvious external cause. It is also found that aneurisms, as well as other diseased changes of the arterial coats, are much more frequently in the male than in the female subject. Mr. Hodgson, in his work on diseases of the arteries and veins, has given a table—a list of all cases of aneurism he had seen, which will show you the comparative frequency of them. This table includes sixty-three cases altogether; of these—

	Ms.	Fem.
21 were aneurisms of the arch of the aorta, and of the arteria innominata; and of which were	16	5
8 Ditto, descending, ditto	7	1
2 Ditto, carotid artery, ditto..	2	0
5 Ditto, subclavian and axillary arteries, ditto	5	0
12 Ditto, inguinal, ditto	12	0
15 Femoral, and popliteal, ditto	14	1
	56	7

So that of the total, 63 aneurisms, fifty-six occurred in the male, and seven in the female subject. This table also shows the other circumstances I have mentioned; the greater number of aneurisms of the larger vessels; so that it appears, that out of the 63 cases, twenty-nine were aneurism of the arch of the aorta, and of the arteria innominata. It exhibits, likewise, the greater frequency of aneurisms in the lower, than in the upper extremities: twenty-seven were cases of aneurism of the lower, and five only of the upper extremity.

There are some rare instances of aneurism being found in some of the smaller arteries. I think we have a preparation in the Museum of an aneurism of the splenic artery. We have here one of the renal artery. In some instances, we hear of their occurrence within the head; such as of the basilar artery, the anterior branch of the carotid, and of their principal communicating branches; but these are very rare occurrences.

I believe that such a thing has not been known as aneurism of the pulmonary artery; at least, I do not know of one, and I have never read of such a case.

Then, having seen the mode in which aneurisms, sometimes, are spontaneously cured, we naturally inquire whether we possess any means which are capable of placing the aneurismal tumour under such circumstances, as would bring about this spontaneous cure, or as would favour its occurrence? The surgical operation of applying a ligature on the artery, between the aneurismal tumour and the heart, is an effectual mode of producing a change by which the aneurism can be got rid of. But in aneurisms of the aorta, we cannot have recourse to this operation. It is true that the aorta has, I believe, in two instances, been tied; but I believe that the result of those operations was not much calculated to encourage a repetition. Aneurism of the aorta, therefore, may be considered out of the reach of surgery. But aneurism of the main arterial trunks of the upper and lower extremities, and those of the neck, even when they are seated very near to the trunk of the body, can all be rendered the subjects of surgical operations. In some instances, however, patients do not choose to submit to an operation; therefore, it would be desirable to find out some mode of proceeding not involving an operation, that would be capable of bringing about the natural cure

of an aneurism. Direct depletion from loss of blood, abstinence, and rest, are the great means of reducing the force of the circulation generally; and thus they contribute towards the reduction of the force of the circulation in the aneurismal tumour; which circumstance contributes to the formation of the laminated coagula, so that the sac might become obstructed, and thus accomplish a natural cure. This course of proceeding has been extensively tried, principally in cases of aneurism of the aorta; and there is the further reason for its adoption in such cases, because they are often attended with very much local suffering, considerable inflammation of important organs, which are more or less interfered with in their functions by the development of the tumours, real excitement, altogether of a feverish character, symptoms which, whether the aneurism is to be cured by the treatment or not, are likely to be benefited by a plan of severe depletion. This mode has been tried extensively abroad; it was tried by an Italian surgeon, of the name of Valsalva; and Morgagni, a friend of Valsalva, mentions that Valsalva had employed it, in many cases, with very great success. He seems to have employed it very effectually, as he reduced his patients often to such a degree, that they could scarcely lift their hands while in their beds. The treatment he recommends, consists of venesection, purging, a very reduced diet, and of absolute rest in the horizontal posture. It is a combination of all those circumstances calculated to reduce the force of the circulation, of a nature to diminish the impetus of the blood into the sac, by which obstruction of the aneurismal sac is to be effected, or to bring the circulation into that quiet, or rather languid state, by which we may suppose the deposition of the fibres, or laminæ, in the sac, would be promoted. I have several times adopted this treatment in cases of aneurism of the aorta, and often with very considerable benefit; first, by relieving those symptoms of excitement I have alluded to, and secondly, by checking the progress of the aneurismal tumour, retarding its increase, and making it stationary. In the course of the last year, a patient who was in the hospital with aneurism of the descending aorta, accompanied by an absolute protrusion of the aneurism in one part, was treated in this way; and under such treatment, the part that protruded, gradually diminished, and at last entirely disappeared. I might observe, however, that I have not seen any case entirely cured by this plan. It is a mode of treatment so repugnant to the inclinations and feelings of patients, that we find they will not submit to it. At first, if they derive relief from urgent symptoms, they are well enough disposed to submit to the inconvenience of this treatment; but, in order to have a chance of *curing* the aneurism, we should pursue the treatment *after* it is no longer necessary for the removal of a few troublesome symptoms; but when we relieve those symptoms, patients begin to feel themselves in a feeble state; they begin to think that they want something that would strengthen them; they will ask for some meat, they would like some beer, like to wait a little before they should be bled again. Whenever I hear these hints, I know it will not do to follow up this treatment, for if it be followed up, they will decamp. (*Laughter.*) If you are ever inclined to follow it up, the friends, the patients themselves, and the nurses, seem all to be combined together; they do not "understand" the principle of Valsalva. (*Laughter.*) And they will not give it a fair chance. I have not had, therefore, an opportunity of following up this plan of treatment to its utmost extent, although I have seen so much good done by it, as to induce me to think that if there could be a complete adoption of the principle, there might be, in some cases, a complete cure effected. With respect to bleeding, it is necessary, however, to proceed with a little caution; for we find by experience, that in serious organic affections of the heart, or large vessels, syncope will sometimes come on which will terminate fatally. It is not uncommon for a person under such an affection to die suddenly; and one would not like to run the risk of bringing that on by venesection. We should take care, therefore, not to take away too much blood at once, but rather repeat the operation occasionally. It may be a question whether any auxiliary assistance can be derived in this plan of treatment, where the tumour projects externally, by applying cold lotions, or even ice to the swelling; whether such applications have any tendency at all to promote the coagulation of the blood? I fancy they have not; and if very cold applications, such as ice, are applied, they become very painful to patients, and give them a great deal of inconvenience. I should mention *digitalis* to you as an internal auxiliary; this is a case in which, if we can produce a great reduction in the force and number of the pulse, the usual effects of this medicine, the object may be materially advanced.

Lecture XLIV.

Vascular System continued.—Aneurisms resumed.

I spoke to you, Gentlemen, in the last lecture, of that method of treating aneurisms, particularly those of the aorta, by venesection, abstinence, and rest, with the other means calculated to lower the course of the

circulation which has been called the method of Valsalva; and I stated to you that I had not myself, witnessed any example of a perfect cure effected by that course of proceeding. I believe that others may have been more successful, in this respect, than I have been; at all events we find in Mr. Hodgson's work on diseases of the arteries and veins, several cases, at least in some of which, it seems reasonable to suppose that aneurisms of the aorta were completely and permanently cured by this plan of treatment. I have pleasure in directing your attention to this work of Mr. Hodgson, as it contains a great deal of very clear exposition, relating to what we know of the important subject of diseases of arteries and veins. You will find in it a very full and satisfactory account of the physiological and pathological principles relating to this subject with a very valuable collection of facts to illustrate them, and you will find the whole arranged in a very clear manner. The method of Valsalva is not strictly confined to aneurisms of the aorta; there may be external aneurism with a good deal of local excitement and general disturbance of the system, and yet patients will not submit to an operation; you may here have recourse to that treatment as the next best measure.

I mentioned to you also in the last lecture, that aneurismal tumours do not possess sometimes that most striking character of the disease, *pulsation;* that is, you cannot feel pulsation in the tumour. And I also mentioned to you that there are some instances in which pulsation cannot be felt, but in which it may be heard either by the application of the ear directly applied to the tumour, or through the medium of the instrument called the *stethoscope*. The sound that is communicated in either of these cases is very peculiar, the sound produced by the passage of the stream of blood from the opening in the artery leading to the aneurismal sac. The blood passes through comparatively a contracted orifice, to enter into a large cavity, and each jet of the blood propelled into the aneurismal tumour by the contraction of the heart produces a sound which is something like that of the sound of blowing through bellows—*whih whih whih*; you will hear a succession of these, and hence the French, in my opinion, have very appositely characterised it by the term *bruit de soufflet*, soufflet is the term used for bellows; and, in fact, it means "noise of a bellows," and, in short, it cannot by any term be more clearly illustrated.

Pressure has frequently been tried as a mode of treating aneurism, and two methods of applying it have been adopted; one in which the aneurismal tumour, and the artery above it, have been subjected to the pressure, and the other, in which pressure has been applied simply to the arterial tube. In the former instance, compresses have been placed on the aneurismal tumour, and also on the trunk of the artery above the tumour, that is, upon the trunk of the artery between the aneurismal tumour and the heart. These have been firmly bound down, so as to create a pressure on the aneurismal swelling, and that portion of the trunk of the artery immediately contiguous to it; and those who have tried this treatment have combined with it the other measures which I have described to you, under the title of Valsalva's treatment—depletion, rest, and so forth. Now, we cannot easily perceive how pressure on the external portion of the aneurismal tumour can be likely to diminish its size; and I think we may conclude, very safely, that the binding of a compress above the aneurismal tumour will not prevent the passage of the blood into the aneurismal swelling. We should say, *à priori*, I think, that we should not expect any very effectual result from this mode of treatment, and such, in fact, is the recorded result of experience. In the great majority of instances, pressure applied in this way seems totally unwarrantable, as you may suppose. It has been proposed, however, to submit the artery, above the aneurismal tumour, to an effective pressure, such as would bring together and keep the sides of the artery in contact, so as to occasion an effusion of lymph, for that lymph to become organised, and in this way obtain the obliteration of the artery. Now this can be effected in the horse; that is, if you apply a tourniquet on an artery in the leg of the horse, and screw it very tight, and leave it there for two or three days, inflammation is excited, lymph is effused externally and internally with respect to the artery, and the tube becomes obliterated; but the truth is, that this kind of pressure cannot be borne by the human subject; the pain is so excessive that the necessary pressure cannot be applied. You might easily suppose this, I think, when you consider what sort of pressure is necessary, in the case of amputation, to command the flow of blood through the main artery of the limb; you find it is necessary to apply the tourniquet very tightly; you find that this is a very painful process to the patient, and that if it were to be prolonged for a very few minutes it could not be borne. You may easily suppose that nobody could bear, therefore, such a thing for three or four days. Without, then, asserting that pressure has in no instance, either cured or contributed to the cure of aneurism, we may at least say, that in the vast majority of instances it has totally failed. We may state generally, that persons cannot bear pressure sufficiently to produce a closure of the artery, and,

consequently, that this measure does not deserve repute as a remedy in aneurism; so that we are not surprised it has fallen into general disuse. The only effectual mode, then, of proceeding, is the surgical operation of tying the artery above the aneurismal tumour, or at the place where it opens into the aneurismal swelling. This is, at all events, a rational mode of proceeding, and when the operation is performed in a proper way, it is both safe and effectual. The old operation for aneurism, that, indeed, which was performed, comparatively up to a very recent period, was a very formidable one. It consisted in laying open the aneurismal tumour in its whole extent, clearing out the coagula it contained, and securing the orifice of the artery by ligature, where it entered the aneurismal sac, securing either the upper, or the lower, or both orifices of the artery. Now when you consider that it is by no means always a very easy undertaking, to lay bare an artery and tie it, even when you choose your own situation for the operation, you will understand, that great difficulty must have been experienced in tying an artery, when it was attempted as I have just described—when the orifice was confounded with, and closely surrounded by, other parts, and, probably, deep-seated, as, for instance, in the ham, where the artery lies close to the bone, and where you might have an aneurismal tumour of perhaps five or six inches in depth to cut through, before you could arrive at the orifice of the vessel. You must consider, that such attempts to secure an artery were made, when the principles applicable to ligatures were totally unknown, and, consequently, that the most rude and unscientific means were adopted. You must consider, also, the extent of inflammation that would arise from laying open a large aneurismal sac like this—the inflammation, suppuration, and probable mortification. When you consider these things, you will not be surprised that this old operation, as it is called, was almost invariably fatal; that it was so uncommon for a patient to escape with his life when the operation was performed, that, in fact, surgeons had very much abandoned it, and considered it better, when there was a prospect of saving the life of the patient by amputation, that the limb should be removed. Mr. Pott mentions aneurism of the popliteal artery as one of the cases in which it is necessary to perform the operation of amputation; he considered the case of popliteal aneurism so desperate.

We are indebted to Mr. Hunter for the principle of the modern operation for aneurism. It has been found, however, that some of those who preceded him, and particularly some older writers, have given a description, more or less close, of an operation something similar to that which he proposed for aneurism; so that it is doubtful whether we can ascribe to him entirely the merit of the new mode of operating. There can be no doubt, however, that the merit of the discovery is so far due, that he was not acquainted with the passages in those older writers in which the operation is described, or supposed to have been described, when he brought forward the subject; and, at all events, that he arrived at this mode of proceeding, from a physiological view of the principles applicable to the cure of this disease. By this mode, the artery is tied at some distance from the aneurismal sac; that is, a ligature is placed upon the artery in a situation where it is found most easily accessible; and the aneurismal sac itself is not touched, it is left entire. The consequence of this mode of proceeding is, that the arterial trunk becomes obliterated where the ligature has been placed, so that the direct impulse of the action of the heart is removed from the sac; the pulsation of the aneurism ceases, and the tumour itself gradually diminishes, and in some degree immediately after the artery has been tied. Now, in consequence of this removal of the propelling force, by which the aneurismal sac is kept distended, the blood in it no longer circulates freely, but coagulates, and thus, in fact, it becomes completely filled with coagulum, so that the further supply of blood to the aneurismal tumour is completely cut off. When this is effected the aneurismal sac contracts, the coagula, which it contains, are removed by absorption, and, in fact, the aneurism undergoes the same kind of obliteration, as it does in the spontaneous cure, when no operation has been performed. In order to produce the changes which I have just mentioned, it is not necessary that the circulation of the blood through the sac should be at once entirely suspended; and, in fact, the ligature on the arterial trunk, above the aneurismal tumour, does not, in reality, always produce this effect. The freedom of the circulation is so great, that although the trunk of the femoral artery may be tied, blood passes into the aneurismal sac from vessels arising above the ligature, although not with a sufficient degree of force to produce pulsation; it does pass however into the aneurismal sac, though with a less degree of force; but the disposition of the aneurismal tumour to contract, and the disposition of the blood it contains to coagulate, are stronger than the enfeebled force of the blood is capable of overcoming; and the consequences are, the coagulation of the blood, and the other changes I have mentioned. That the blood is not at once rendered stationary in the aneurismal sac, is clear from this circumstance, that, in some cases, pulsation returns

after the ligature has been applied to the artery; it is arrested for some time, but, in the course of a few hours, it begins again and to the alarm of the surgeon, lest the operation was not performed properly. Now this has been observed both in aneurisms of the popliteal and of the carotid arteries; however, the pulsation thus produced is a feeble one, it lasts for sometime, then gradually diminishes, and ultimately disappears altogether. The mode of cure, then, so far as the aneurism itself is concerned under the operation, as it is at present practised, is just the same as in that of the spontaneous cure I have had occasion to describe to you—the spontaneous cure which takes place by the gradual obstruction of the aneurismal sac by coagula.

Now, before you are fully acquainted with all the resources of the animal economy, particularly as regards the circulating system, you might entertain a suspicion, that when the main artery of a limb, for instance, is obstructed by ligature, that the limb itself could not be adequately nourished; that it would not get a sufficient quantity of nourishment to enable it to execute its natural functions. We find, however, that the communications of the smaller arteries are so free all over the body, that when an arterial trunk is tied, in any situation where it is accessible to surgical operation, the parts beyond the ligature are always adequately supplied with blood; so that no doubt on that head need be entertained in any case. If you place a ligature on the trunk of the aorta, just above the diaphragm, in the dead subject, and then insert an injecting tube into the mouth of the aorta, where it comes off from the heart, and throw water into it, you will find that it goes far beyond the parts immediately below the situation of the ligature. For example, if you open one of the tibial arteries, you will find that the water you threw in will flow out in a stream, though you had put a ligature on the descending aorta; thus it appears there is an adequate communication between the blood-vessels to admit of a sufficient circulation, even if the aorta itself were tied. You might suppose, that although this takes place in the dead subject, it might not occur in the living; but the aorta has been tied in the dog frequently; indeed, it is not difficult to tie it in the dog, where it lies upon the lumbar vertebræ, without injuring the abdomen, and the dog will get well, and the parts below the situation of the ligature will be perfectly supplied with blood. I have already mentioned to you that in two instances, the aorta has been tied in the human being; I think, in both instances, between the aneurismal tumours, and the heart; both those patients died, but there did not appear in those cases, to be any deficiency in the supply of blood to the lower extremities. The patients did not live long enough to give a very decided trial for ascertaining the mode in which the circulation would be carried on in such cases; but twelve or eighteen hours are sufficient to show that it is carried on. The arteria innominata has been tied twice in the human subject, and in both instances the circulation was carried on in the upper extremity and in the corresponding, i. e. right side of the head in the one for about three weeks, and in the other, I think, for about five or six weeks, for the patients lived so long. The trunk of the left subclavian has been tied near to where it comes off from the aorta, and yet the left upper extremity has been adequately supplied with blood. The axillary artery, and the femoral artery below the crural arch, have been both tied in consequence of wounds, and yet the extremities have been adequately nourished. You may consider, therefore, that the powers of what is called the collateral circulation, that is, the means by which the circulation is carried on, when the main arterial trunks are obstructed, are fully adequate to the circulation and nourishment of the parts beyond such ligatures, as you can apply in the surgical treatment of aneurisms. In the first instance, however, I should mention to you, that perhaps the circulation is not so vigorous in a limb in which the main arterial trunk is tied, as if it were in the natural state. In some instances, partial mortification has taken place, perhaps of a toe, where the femoral artery has been tied; this has been very rare; and, I believe, there have been some one or two instances of more extensive mortification, where the main arterial trunks had been tied; but these are very uncommon occurrences; however, in consequence of such examples, we should deem it right to employ all means for preserving the heat of the limb till the natural circulation is restored; we should take care not to let the limb get colder than usual, but to preserve that degree of heat which would be developed throughout the limb naturally.

You will probably inquire what is the time at which the operation for aneurism should be performed. Whether it should be done as soon as the existence of aneurism is known, or whether we should wait for a longer time, until the tumour has acquired a certain bulk? A notion has very commonly prevailed, that it is desirable to defer the operation for aneurism, under the idea that the obstruction of the arterial trunk, and of the aneurismal tumour, by forcing the collateral channels, they become enlarged, so as to be more adequate to carry on the circulation; it has been advised, therefore, to postpone the operation, not on

account of any reasons arising out of the nature of the disease itself, but from what I have just mentioned, to obtain a greater certainty for the circulation through the collateral channels. Now there is no necessity to defer the operation on this account, for the resources of the animal economy are fully adequate to the necessary circulation, if we perform the operation so soon as we ascertain the nature of the disease. But the postponement of the operation is, in other respects, very prejudicial; the enlargement of the aneurismal tumour interferes with very important functions, and produces changes very prejudicial to the parts around. The neighbouring muscles and tendons and nerves, become involved in the aneurismal sac, become firmly connected to it,—sometimes the nerves are pressed upon, and are spread out flat. The progress of the tumour, when it reaches bone, is attended with an absorption of the bone. I have seen a large aneurism in the ham allowed to go to such a size, that considerable absorption took place of the posterior part of the condyles of the femur; and, again, when an aneurism is situated in the axillary artery below the clavicle, the aneurismal tumour situated between the pectoral muscle and the chest, very speedily produces absorption of the ribs. In cases of aneurismal swellings in the chest, where the tumour had not become very large externally, I have seen one or two instances in which the ribs broke and gave way, just on examining the part after death. When the neighbouring parts are thus involved, even if you should cure the patient, considerable stiffness in the motions of the part will be the result. For these various reasons, then, it is advisable to operate early, and this may be safely done, as soon as the existence of the disease is recognised. There is no necessity, or kind of advantage to be derived from waiting, on the contrary, the evils I have just mentioned to you are multiplied by postponing the operation.

The mode of performing the *operation* is simple. The only object you have in view is, to tie the trunk of the artery in such a way, that the sides of the vessel may unite by coagulable lymph, and its tube become obliterated. All you have to do, therefore, in each particular instance, is to cut down upon the vessel, and expose it with as little disturbance of the part as possible, to carry a ligature under it, detaching the artery to as small an extent as possible from its natural situation; in fact, if you use a proper aneurismal needle, you can tie it without raising it more than the mere track that the needle requires. Sometimes people have an idea, that it is necessary to take the artery up between the finger and thumb, before the operation can be properly performed, and that it should be detached to a considerable extent; but you will recollect, that in order to produce that state by which the union of the sides of the vessel is to be attained, you want a perfect state of the coats of the artery; the coats of the vessel derive their nourishment from the vessels surrounding them; if you detach the vessel, you cut off its supply; if you separate it, you cannot be surprised that the deposition of the lymph, and consequent obliteration of the tube, should fail, and, indeed, that hæmorrhage should afterwards come on. On the contrary, if you do not detach the artery, or cut it off from the parts from which it gets its nourishment and supply in the ordinary way, you may expect that the operation will be successful. Then with respect to the kind of ligature you are to use, what I mentioned to you in reference to cases of wounded arteries, is applicable to aneurisms. You should apply a small, round, firm ligature, and apply it tightly; by this method you cut the internal and middle coats of the artery, lymph is poured out, that becomes organised, and the sides of the vessel are united by adhesion.

Now, when the operation was first introduced by Mr. Hunter, the proper mode of tying an artery was not understood, and hence a great number of cases of failure ensued; that is, hæmorrhage came on in a great number of cases after the artery had been tied. The artery having been extensively detached, perhaps tied with a large ligature that bruised and detached its coats, it ulcerated, and the effusion of lymph, and organisation of lymph, necessary for sealing up the artery, did not take place; the arteries ulcerated where the ligatures had been applied, and then repeated hæmorrhage followed. These untoward circumstances led surgeons to suppose that it might be advisable to apply other ligatures higher up, without drawing them tight, and these were called ligatures of reserve; by the French, *ligature d'attente*. In some cases, I think, no less than four ligatures have been applied on one artery; the one nearest the tumour drawn tightly, and the others left loosely, but were to be drawn tightly if hæmorrhage should subsequently come on. You can easily suppose what a degree of irritation the application of four ligatures on one artery would be capable of producing. When you reflect on the irritation that is produced in other parts by a *seton*, for instance, you may suppose the extent of aggravation that four ligatures would be capable of producing; in fact, you would become pretty sensible of the degree of irritation that would be produced if you were to call them the other four *setons*. Then an idea arises, that the secondary effects, and the hæmorrhage that followed, might arise from some injury

to the coats of the artery, inflicted by the application of the ligature, and thus it was thought it would be well to avoid irritating them by the smaller round ligatures, and for this purpose pieces of wood, or cork, were laid on the arteries, and broad ligatures were applied to press on these substances without drawing them very tightly. I think, in a case that was operated on by Mr. Cline, cork was placed on the artery, and two pieces of tape tied round; and a variety of other kinds of mechanical contrivances of this sort were used, in order to obviate the much-dreaded occurrence of hæmorrhage; and no doubt the contrivances that were employed for the purpose of preventing hæmorrhage were just the very means calculated to favour, or rather to insure, the occurrence; so long as such practices prevailed, you cannot be surprised that surgeons were frequently troubled by secondary hæmorrhage, and that many patients were lost. At present, as the principles of applying the ligature are much better understood, those practices are abandoned, and we are now satisfied with passing a single small ligature under the vessel, detaching the artery as little as possible, and applying that tightly. I never saw a secondary hæmorrhage occur after an operation for aneurism, when the operation was performed properly; I have never seen it in any instance where I have myself tied the artery, and I therefore conclude it is a thing not to be much dreaded.

I should mention to you, that bleeding sometimes takes place after operations for aneurism, at the time when the ligature is separated from the artery, from causes that we do not very clearly understand; that several ounces, perhaps half a pint, or even a pint of arterial blood, will be suddenly lost from the wound; but the hæmorrhage being stopped by pressure, and that pressure maintained, it occasionally does not recur. You are not, therefore, to suppose, because hæmorrhage of this kind takes place, that you are to infer it is necessary to proceed immediately to tie the artery higher up. In all such cases you should, in the first instance, try the effect of pressure; and in the majority of instances you will find, if it be properly applied, that it completely restrains and prevents a return of the bleeding. Hæmorrhage frequently takes place after amputation, when the ligature separates from the main arterial trunk, but generally it is effectually restrained by pressure. If, however, the bleedings should continue to be repeated, after operations for aneurism, I know of no remedy but that of tying the artery higher up.

Secondary hæmorrhage may, perhaps, arise in some instances, in consequence of the diseased state of the artery where the ligature is applied. We cannot, by any means, say, that the occurrence of aneurism pre-supposes a generally diseased state of the artery of the limb in which the aneurism takes place—that diseased condition in which there is an opaque appearance and a cartilaginous deposition taking place, particularly in the internal tunics, occurring usually in the arteries of old persons, rather in consequence of age than as a change preceeding aneurism. In many cases, we find the trunk of the femoral artery for example, supposing the aneurism to be in the ham, in as healthy a state as an artery can be; but, undoubtedly, the vessel may be diseased, and there may be some of that opaque cartilaginous deposition upon the internal tunic; but at the same time the mere existence of aneurism by no means necessarily leads to the inference that the artery is diseased, and that hæmorrhage will occur. I have many times seen, in amputations, the main arterial trunk having this sort of deposition, and yet there was no secondary hæmorrhage when the ligatures separated. If this, however, arises after operation for aneurism, the circumstance must be regarded as very unfortunate, because it would be indicative of a diseased state of the artery higher up.

I have mentioned to you, that the aneurismal swelling gradually lessens, and that its contents are ultimately removed by the absorbents after tying the artery; in some instances, however, inflammation takes place, and the aneurismal sac proceeds to suppuration; the matter either escapes by the abscess bursting, or we evacuate it through an opening made by an instrument. I have seen this suppuration happen sometimes long after the ligature had been placed upon the artery. The occurring of severe inflammation in the aneurismal sac is attended with a good deal of local uneasiness, and with very considerable constitutional disturbance. The aneurismal sac, in fact, becomes converted into an abscess, and when we open it there issues a quantity of matter mixed with coagulated blood; and we usually find, under these circumstances, that the contents of the aneurismal sac are extremely fœtid, so that, when we give issue to a large quantity of stinking pus and coagula, we see, pretty clearly, why the patient has suffered serious constitutional disturbance. I have witnessed this occurrence in some three or four instances, but in none of which did hæmorrhage ensue when the aneurismal sac was opened. In all these cases I found it necessary to open the aneurismal sac and evacuate its contents; and if the current in the artery had not been previously opposed by coagula, probably the change which took place in the aneurismal sac would have produced such an obstruction in the trunk of the artery as would have prevented hæmor-

rhage. In all the cases I have seen, the process has gone on perfectly well after the sac has been opened and its contents evacuated.

Another mode of operating has been proposed in cases of aneurism, in which the situation of the tumour is such as not to admit of the operation that I have already described. When an aneurism of the femoral artery, or of the axillary artery, reaches so close to the trunk of the body, that there is not space for the application of the ligature *between* the aneurismal tumour and the heart, or when an aneurism of the carotid artery is situated in a similar position as regards the chest, it has been proposed to place a ligature on the artery *beyond* the aneurismal tumour. This proposal originated with a French surgeon of the name of Brasdor, who himself, however, does not seem to have reduced it to practice. It was tried by another French surgeon of the name of Deschamp, but the circumstances under which he tried it, prevent our drawing any clear inference from the result of that case. Having been tried also by Sir A. Cooper without success, it was reserved, in fact, for Mr. Wardrop to revive this operation, and to bring it to the test of practical experience, and this he has done of late years; he has published a work on the subject, explaining the principles on which the operation is founded, and in which he has also recorded some very interesting results of his experience. You are aware that the question whether tying the arterial trunk *beyond* the aneurismal tumour is capable of effecting its cure, is entirely one of experience; it can only be solved by an appeal to facts, and in order to determine it, we require perhaps a considerable number of facts more than those we at present possess. The circumstances under which aneurisms are placed, in reference to the trunk, and with respect to such an operation, are not always alike; in fact, we may distinguish two cases in which the results of this operation may be very different. In the first place, we might reasonably expect to succeed, if we could place a ligature upon an artery leading from an aneurismal tumour, under circumstances that would entirely prevent the current of blood through the aneurism; we should expect here the same result as when we cut off the supply of blood, by placing a ligature between the aneurismal tumour and the heart; but there are very few arteries that are so circumstanced—perhaps the carotid artery is the only one. If an aneurism be situated at the lower part of the carotid artery, suppose the common carotid be then tied, we know that no branch is given off between the ligature and the aneurism, by means of which the circulation in the tumour can be carried on; therefore, if it were tied effectually, there could be no current of blood through the tumour, and that coagulation might take place necessary for the cure of the aneurism. Mr. Wardrop first tried the operation in a case of this kind, and it was completely successful. The operation was subsequently performed in a case of aneurism of the carotid artery, and it appeared again to have been completely successful, so far as the contraction of the tumour was concerned, but that patient unfortunately died in consequence of hæmorrhage from the upper orifice of the artery where it had been tied—from the remote orifice of the artery, a circumstance, however, that does not at all diminish the value of the inference that is to be drawn from the operation, as far as regards the principles upon which it was founded. When, however, we come to aneurism on the trunk of the axillary or femoral artery, the case is different; if we tie the vessel *beyond* the tumour, in either case there are important branches given off between the disease and the ligature, by which, probably, a current of blood will continually be kept up through the tumour. In a case of aneurism of the femoral artery, for instance, we should hardly be able to tie the trunk of the vessel beyond the tumour, above the origin of the profunda; if, therefore, the profunda be left going off either from the aneurismal sac, or from any part between the aneurism and where the trunk of the artery has been tied, we should expect, from the active circulation which would be kept up through the tumour, that the operation would fail. In cases of aneurisms of the axillary artery, there are a variety of large branches situated near to the tumour, so that we could not apply a ligature on the *distal* side, between them and the tumour itself, and these branches would keep up the circulation of the blood through the tumour, in the same way that it would be maintained if no ligature were applied. The two cases seem, therefore, to be very different in point of principle; that in which the aneurism is situated near the trunk, and where the vessel gives off, no branches between the disease and the ligature; and that in which it is so situated, that numerous branches are given off between where we can apply a ligature, and the situation of the aneurismal tumour. Still, as I have already said, the question is one of experience, and until it has been fairly tried, we cannot venture to assert that the application of a ligature on the trunks of both femoral and axillary arteries, *beyond* the aneurismal tumour, may not be effectual.

That the obliteration of the inferior end of the artery does not necessarily lead to the cure of an aneurism, I have had occasion to mention already; and, indeed, I have related a case in the course of my observations,

in which the inferior end of the femoral artery had become obliterated, probably from pressure of the firm aneurismal tumour. Now, there the obliteration had occasioned just the same effect as it is proposed to produce by the application of the ligature *beyond* the tumour, and yet the object was not accomplished. The impression on my own mind is, that the operation of applying a ligature *beyond* the aneurismal tumour, is not likely to succeed on the femoral or axillary artery. There would be great difficulties experienced in executing the operation. The aneurismal tumour often advances very considerably upon the artery, beyond the part where the vessel has given way, so that we cannot get near enough to where the artery has yielded, to apply the ligature close to the spot, consequently collateral branches left between the ligature and the aneurismal tumour keep up the circulation in the way I have mentioned. You will remember, however, that the question of performing this operation can only arise in cases of a very serious description, where the position of the tumour is such as to preclude the performance of the ordinary operation, so that the patient is left, probably, to an almost certain death, unless some attempt of the kind be made. Under such circumstances it may, perhaps, be preferable to try a doubtful expedient rather than leave the patient to his certain fate; and, at all events, you will consider that the observations I have addressed to you are rather those of doubt; they are not founded upon my own experience, for I have not seen the operation performed; and in such cases we should sometimes distrust general reasoning, for we often find when we come to try an operation that it produces a different effect to what we expected.

Varicose Aneurism.—There are a few observations which I have to make to you respecting *varicose aneurism*. Varicose aneurism is produced by a wound, generally by puncture of the brachial artery in venesection; and a peculiarity arises from this circumstance, that the artery being wounded through the vein, these vessels become connected, closely adherent to each other, and at the same time the wound or aperture of communication remains between them, so that the blood, instead of flowing out from the artery as it does under ordinary circumstances, passes immediately into the vein; thus the vein becomes the aneurismal sac, and a swelling very similar to what is called *varix*, ensues—a *varicose aneurism*. A varicose aneurism, then, is a tumour usually situated at the bend of the arm, it pulsates, and receives that impulse from the blood derived from the artery. In order to produce this effect, the external coats of the artery and vein must be closely attached. The flowing of the blood from the *artery* into the *vein* produces the varicose state; hence it is called varicose aneurism; and the swelling generally proceeds to about the size of a walnut or pigeon's egg, and then remains stationary. It does not enlarge beyond that, the blood passes through the continuous vein in its ordinary course, and inasmuch as there is an outlet from the distended varicose part of the vessel, the aneurism is limited. No doubt this would enlarge much more considerably, and ultimately proceed to inconvenience, unless the blood ran through vessels which carry it back to the heart. In this way the complaint remains stationary through life; it does not acquire a great size; no operation is necessary for it; the limb is perhaps rather weakened, but in other respects the patient suffers no inconvenience. There is that peculiar vibratory thrill communicated to the hand and to the ear, which is produced by the passage of the blood from the artery into the vein. The sensation is almost the same as that which is communicated to the hand by the vibration of the cord of a musical instrument, and it is particularly described by some writers, who call it a *rilling* noise; some call it a *whizzing*, and some a *vibratory* noise. This noise is not only heard in the swollen part of the vein, but it also extends along the course of the vessel up the arm. I now show you a representation of a varicose aneurism. This is a drawing taken from the arm of a young gentleman, in whom the vein was punctured about five years before the drawing was made. He was labouring under serious pulmonary inflammation, and was bled in consequence. Nothing particular was observed at the time of the bleeding; the wound was closed after the requisite quantity of blood was taken, compresses were placed on the arm, it was bound up, and the surgeon was not aware that any thing unusual had happened. In the course of the night, however, the patient felt the arm very uneasy, and he mentioned this circumstance to the surgeon when he came to see him the next day, when the bandage was taken off, and then, according to the description of the patient, he saw a swelling that was *beating*. The surgeon, no doubt, saw it also, for he applied compresses, and bound the arm tightly up, to put a stop, no doubt, to the pulsation; but the bandages were so tight that the patient could not bear them; they were loosened, but still applied so tightly as the sufferings of the patient would permit. He was at last much reduced by the effects of this accident and the pulmonary disease, and he kept in bed for five months, so that he was under very favourable circumstances for producing a cure of this varicose aneurism; however, it

had arrived to the state you now see it, and remained in that condition for four years and a half after the occurrence: it is about the size of a pigeon's egg. When the patient held up his arm, the tumour disappeared; that is, the blood passed out, and it became quite soft. You could press the blood out of the tumour at any time. Coagulation does not take place in such cases, and there was in this instance a very marked degree of that vibratory thrill which characterises the complaint. The oval soft swelling which you see depicted here, is an enlargement of the veins, and particularly the basilic vein, and it extends for about three inches above the wound in the artery; it is tortuous, and it is clear that the swelling at the bend of the arm, and the varicose aneurism above, are owing to the influx of blood from the artery, and not from any other cause; otherwise, the veins below the wound in the artery would be enlarged, whereas they are only enlarged above. I should observe, that no pulsation in this case could be felt at the wrist of the same arm; the diversion of the arterial blood into the vein at the bend of the arm, prevented the pulsation at the wrist; and in conformity with that, the circulation in the limb appeared to be enfeebled generally, the arm was more livid than the other, colder, and not so strong.

EDINBURGH UNIVERSITY.

CLINICAL LECTURES IN MEDICINE,

BY

DR. DUNCAN.

March 26th.

ANEURISM OF THE AORTA,

With extensive Absorption of the Spinal Canal—Disease of the Liver, Stomach, and Duodenum—Inflammation of Heart, and Pericardium—Singular Alteration of the Lungs, and Bright's Disease of the Kidney,—all occurring in one Patient.

A CASE, Dr. Duncan stated (that of Bell M'Kenzie), had terminated fatally, which on dissection presented them with a strange multiplicity of organic disease. He would first relate the appearances discovered, accompanying the statement with remarks on the symptoms produced by these changes during life. The first organ examined was the *liver*; this was found extensively enlarged, of a granulated texture, and consisting principally of a morbidly increased proportion of the grey matter; the acute margin towards the right side was remarkably thickened. During life, no complaint was made *referable* to disease in this situation nor was there the slightest suspicion of its existence. The next organ was the *stomach*, which was also the seat of considerable morbid alteration; the viscus, with part of the *duodenum*, he Dr. Duncan, had now before him; they were, externally, generally of a whitish colour, but in some spots there were decided marks of increased vascularity, while, in other places, there were green and yellow stains; there was but little thickening of the duodenum, but its inner surface, though free from ulceration, was softened in the manner often seen in chronic diseases of this organ, or, as is still more frequently observed in disease of the rectum, the stomach externally appeared unusually small, and evidently thickened, especially in its centre, and towards the pyloric extremity; internally, the rugæ were found remarkably prominent, and in the situations just mentioned, there were several depositions beneath the mucous coat, giving it quite the firmness of a cartilaginous texture. During life, no symptom existed connected with stomach disease. Dr. D. had also before him a portion of the *pericardium*, which, on its external surface, was coated with recent coagulated lymph, its texture thickened, and very firm; the external surface of the *heart* was also covered with a recent deposition of coagulated albumen, and in one part, between it and the pericardium, there existed a firm adhesion; these appearances were indicative of recent inflammation, and there were some symptoms observed during the woman's illness, consistent with the evidence they afforded. A rather singular and unusual circumstance, too, was, a modification of the fat surrounding the heart, especially where the left auricle and ventricle were connected to each other, namely, its change into a kind of transparent gelatinous mass, possessing, however, most of the chemical properties of fat, and leaving a permanent oily stain when rubbed on paper; internally the heart was extensively disorganised; the mitral valves were contracted, and incapable of performing their functions; near the insertion of the left auricle, there was a hard projecting bony excrescence of small size; the great vessels were all thickened at their origins; the base of the semilunar aortal valves were beset with a granulated deposition, which descended into the ventricle also; the pulmonary artery, Dr. Duncan continued, was healthy throughout, as is always the case; the right auricle was completely filled by a large coagulum, or polypus, continued in both cavæ, and projecting into the pulmonary artery too. (The several parts were here handed round, and explained by the Professor to the class.)

In the *kidneys*, Dr. Duncan proceeded to

state, an excellent example was afforded of the peculiar alterations to which Dr. Bright had first called the attention of the medical profession; in fact, Dr. Duncan observed, on comparing Dr. Bright's delineation with the parts before him, it would almost seem to have been drawn from the kidney on the table. This appearance he, Dr. Duncan, had before informed the class, was supposed by Dr. Bright to be invariably connected with albuminous urine, and *vice versa*, that where albuminous urine was absent, no such changes were observed on dissection. During the time this patient was in the clinical wards, no symptoms of renal disease were evident, or else they were overlooked amid the crowd of other affections. During the post mortem examination, however, Dr. Gregory was so attentive as to examine the urine remaining in the bladder, which yielded a copious and firm coagulum of albumen on the application of heat. (The test-tube containing the coagulated urine, and the kidneys, were here handed round, and Dr. Duncan especially directed the notice of the class to the changed and curious appearance of the cortical portion of both kidneys.)

The next diseased organ was, the *lungs*; the right was somewhat emphysematous, and crepitated on section; the left was, throughout, one entire and complete mass of disease. That this disease was the consequence of great and recent inflammation, he, Dr. Duncan, had no doubt, but he was totally at a loss for an appropriate name to distinguish the morbid condition it now presented; it was a sequel, he considered, of peripneumonia, but one not identical precisely with any of the stages of that affection described by modern pathologists; neither was it of a tubercular character, but the entire lung was converted into an impervious mass, full of small cavities, which, when cut into, exactly resembled the cells of a honeycomb, and were entirely destitute of any lining of adventitious membrane; they contained, moreover, a greenish fluid, of rather offensive smell. Dr. Duncan also handed round the lungs, and observed further, that it was difficult to say how long this condition might have existed, but he believed that the death of the patient was immediately owing to the pulmonary disease.

In the progress of the dissection, Dr. Duncan continued, it was discovered that another extensive and formidable disease had existed, and proceeded to a great length, without once having been suspected during life; this was aneurism of the thoracic aorta, one of those obscure affections which, though especially studied, was yet liable in the most skilful hands to be declared present; and when not existing at all might, on the contrary, proceed to a great extent without being in the least suspected; this was the case here, though, from circumstances, he, Dr. Duncan, was induced to expect ossification of the aorta. (He here proceeded to demonstrate the parts.) The ascending part of the arch of the aorta was greatly enlarged, and contained a fibrinous coagulum, or polypus, of considerable size; from hence the aneurismal sac extended to the spine, to which it firmly adhered, and this sac was also occupied by a large concretion of fibrin. At the part where the descending aorta began, there was a sudden contraction, and here the coagulum ceased; in its entire extent it left a part of the calibre of the artery free, and its surface next the convex aspect of the aorta was perfectly smooth, so that it formed, as it were, a new side for the diseased vessel. The origins of the arteries of the arch were unaffected, and these vessels were of natural size; from the situation of the aneurismal clot, it was, in fact, so placed, as not to interfere with the circulating current. As was usual in such cases, when they had proceeded to a great extent, the spine was extensively diseased; on separating part of the sac, the periosteum had been evidently destroyed, and in consequence of the continued and increasing pressure, it was carious to a remarkable degree, and from the third to the sixth dorsal vertebra, completely deflected from its natural position.

Here then was a multitude of diseases, of which four at least were of vital importance, simultaneously existing in one patient. She was admitted almost in a moribund condition, and her principal symptoms he, Dr. Duncan, would now briefly allude to. In the first place she lay constantly on the left side, which was readily explained now by the wholly impervious condition of the left lung, and also by the evident fact that this was the best posture for the transmission of the blood through the diseased arterial vessels. The second symptom was, that when in the semi-erect position, she endeavoured to support herself with her hand, a circumstance which, by many, is considered pathognomonic of hydrothorax, but it certainly was not so in this example. She complained also of acute pain under the sternum, which appears to have been produced by the inflammatory state of the pericardium; there was besides great pain of the loins, referred, vaguely, to the spinal column by the patient herself, increased by motion, coughing, or deep inspiration. She also complained of thirst, violent cough occurring in frequent paroxysms, with frothy mucous and sanguinolent expectoration; at intervals, too, she threw up a quantity of watery fluid, which, probably, came from the stomach, or perhaps was secreted by the salivary glands. The right side of the thorax was resonant on percussion, the heart's action very exten-

sively diffused, and its impulse augmented; she had severe headach, particularly of the right side; anorexia, œdema of the feet; bowels open; pulse 120, small, and irregular; now all these, except the headach, were amply explained by the account of the dissection. The history of the case was briefly this:—That five years ago, after exposure to cold and wet, the catamenia suddenly ceased, and she became affected with pain in the loins, cough, and hæmoptysis; ever since then she has been in a very bad state of health; recently all her complaints were much aggravated, and she laboured under distressing palpitations and anxiety. On the 3d of March, she became faint suddenly while near the fire, and as soon as she recovered, a fit of coughing came on, with profuse expectoration of blood, which lasted about half an hour, and left her in a state of great exhaustion. Of this circumstance, Dr. Duncan observed, the dissection gave no explanation, for he had in vain attempted to trace any connexion between the aneurismal sac and a bronchial tube. It occasionally happened that, in cases of aneurism of the aorta, sudden hæmorrhage came on, the patient fainted, yet survived for some time after. A remarkable example of this he saw in the Royal Infirmary, in a patient of the late Dr. Gordon, who lived for several hours after the rupture had taken place. On dissection, an aneurism, of the size of a golf-ball, was found attached to the ascending aorta, from which an aperture, of the size of a crow-quill, led into a bronchial tube; within the aneurism there existed a clot, which, from its peculiar conformation, seemed to have acted as a valve in preventing violent hæmorrhage, so that the patient, after the first gush, sunk from a more gradual loss of blood. In this case a remarkable circumstance occurred, namely, the distention of the stomach with blood; this was important, as it was connected with a very probable subject of medico-legal inquiry; here it resulted entirely from the swallowing of the blood discharged from the aneurism. Being the first thing, however, noticed in the examination of the body, it afforded a topic for several ingenious conjectures, some of the by-standers suggesting, that it might have transuded through the coats of the vessels, till, at last, the discovery of the aneurism explained the nature of the fact.

To return to M'Kenzie's case, Dr. Duncan continued:—Since the first fainting fit, she scarcely ever rallied; in such a condition remedies were of little consequence, except such as might palliate a fit of coughing, or some other distressing symptom. The cause of such a combination of diseases might, perhaps, be most correctly referred to a broken-up constitution, influenced and assisted, very likely, by habits of continued dissipation—an opinion corroborated, in some degree, by the state of the liver, noticed in the commencement of the case.

April 2nd.

STRICTURE OF THE RECTUM.

Dr. Duncan stated, that since the preceding lecture, some new cases had been admitted; the first, he would notice, was that of Elizabeth Bain, a woman of middle age, and labouring under two distinct and serious diseases, namely, scirrho-contraction of the rectum, and a thoracic affection, apparently depending on a deranged condition of the heart. Though this species of narrowing of the intestine was a most fatal complaint, and ordinarily attended with peculiarly distressing symptoms, yet it sometimes happened that it existed long, without being discovered. This circumstance once occurred in a patient of his, in whom the disease was not suspected till it was detected on dissection; the individual died apparently of chronic diarrhœa, yet a great accumulation of solid, and very fœtid fæculent, matter was discovered in the intestine after death; contractions also often took place in other parts of the gut, especially the caput cæcum coli; and here also the signs, indicative of the disease, were considerably obscured. In the examination of such cases, besides taking into account the local pain and general distress, it was always important to examine the form of the fæces, which, in some cases, was sufficient to indicate the nature of the disease, the fæculent mass being moulded into a peculiar shape at or near the termination of the rectum; wherever this happened, and when the form presented was flat, and the surface irregularly grooved, he, Dr. Duncan, considered a scirrhous contraction of the rectum almost certainly denoted.

The patients now in the ward, however, exhibited an example of the disease in a more decided and tangible form; there was a constant discharge per anum of very fœtid sanious matter; (this, he observed, was still not a very frequent symptom); great internal pain was complained of, much aggravated by the introduction of the finger; within the rectum several schirrosities were distinctly felt, about two inches above the anus; and the intestine was here so diminished in calibre, as scarcely to permit the introduction of the finger at all. She had already been a patient in the surgical wards, where bougies were employed without benefit; in fact, he believed that bougies were very seldom of service, but on the contrary, generally increased the pain and irritation. She laboured also, as was already stated, under a thoracic affection, consisting of cough, hur-

ried respiration, and diffused and increased action of the heart; various dyspeptic symptoms were also present, such as nausea, loss of appetite, flatulence, &c. In such a case as this, Dr. D. continued, he believed all plans of treatment were alike ineffectual, as far as radical cure of the disease was concerned; much might be done, however, to palliate and allay its peculiarly distressing symptoms; for this purpose, anodynes of various sorts were recommended, both for internal use and direct application; hemlock had been especially praised; but as far as his own experience went, he did not estimate its powers very highly; still, in compliance with the general opinion of its utility, he here directed pills of hemlock for internal use: these pills to be made of the extract of the hemlock, and the powdered leaves—a form he found to answer very well, as it produced a more certain operation of the remedy, and was of a consistency fitted for convenient administration. Hemlock, in different forms, was asserted to be directly anodyne, by various authorities; but on the contrary, he thought he had often known it to produce headach, and aggravate many existing symptoms. In this case it should have a fair trial, and should be discontinued if any bad effect was observed. He should add too, that in the form of ointment, it was also applied directly to the diseased part. Another circumstance would also receive attention during the progress of the case, namely, the prevention of any accumulation of fæcal matters above the stricture. In this manner life might be protracted for some time; but he believed she was as comfortable at present as she could expect to be during the remainder of her existence.

This patient has since been dismissed in as easy and comfortable a condition as it was likely she ever can enjoy. During her stay in the Infirmary the treatment of her disease was simple and uniform, directed solely to the palliation of distressing symptoms, and preventing their return when once removed; such was the only method the irremediable nature of the disease rendered available, its diagnosis having been once satisfactorily established. To prevent exacerbations of pain, the principal and easiest plan consisted in keeping the bowels in that state of free motion by which all retention of fæculent matter would be avoided, for no circumstance was productive of such intolerable agony to patients labouring under this affection, as the passage of scybalous fæces through the contracted intestine. In our endeavours to effect this object, bland and emollient diet should constitute an important part of the treatment, assisted by the gentlest laxatives, always carefully avoiding the employment of drastic or irritating cathartics, which, of themselves, would prove sufficient to exasperate all the painful symptoms of the disease. It was the usual practice also, and he believed it would be found generally advantageous, to endeavour to diminish the sensibility to pain, by the use of various suitable anodynes, either internally taken or externally applied. He had before mentioned that hemlock had acquired great celebrity for this purpose, and accordingly it was ordered in this case; its good effects, however, were by no means decided, for under its use, headach, nausea, and general distress, very soon supervened, and the medicine was necessarily given up. After this various dyspeptic symptoms prevailed for some days, and upon one occasion (9th April) she vomited so continually that nothing but an absorbent mixture was retained: when these unpleasant symptoms were allayed, she became easier and more free from pain than she had been for a long time, and he, Dr. Duncan, was glad to accede to her proposal of leaving the house, as he felt convinced that as great relief had been afforded her as she was ever destined to obtain.

HEMIPLEGIA, TREATED BY THE ALCOHOLIC EXTR. NUX VOMICA.

The next patient, to whom Dr. Duncan called the attention of the class, was the widow Sinclair; who was admitted on the tenth day of paralysis, remaining after an apoplectic fit of the sanguineous kind, he believed. She was about forty years of age, of short, full, plethoric form, with a short neck. The whole of the left side was deprived of the power of voluntary motion, with the exception of the finger joints, where it seemed as if commencing to return. In this case, the sensation of the paralyzed side remained unaffected—a circumstance frequently observed, and entirely intelligible, on the established principle of the different functions distinguishing the sensitive and motive nerves supplying the paralyzed parts. The fact of the sensation remaining unaltered is, in general, a satisfactory indication of the probable termination of the case; as it shows, that the disease can scarcely proceed from any extensive morbid changes interfering with the origins of the nerves. However, from the make of this woman, and the state of paralysis in which she was admitted, he at first conceived a most unfavourable opinion, but in this he had now reason to think he was deceived. Besides the symptoms already mentioned, she complained of constant pain in the head, and was continually muttering to herself, though distinct in the purport of her replies when suddenly roused. The head was turned towards the left side, the positions of

the tongue various, being reported as fully protruded on the day of admission, but after that as being deflected laterally. The pulse was not above 60, but irregular in strength and rythm; the bowels, as usual, torpid, except when excited by cathartic medicines. As far as these phenomena influenced the prognosis, the first, or the muttering, was decidedly unfavourable, as it indicated great cerebral irritation; the distinctness, however, with which she understood interrogatories, when suddenly roused, was, on the other hand, a favourable sign. The constant pain of head remaining so long after the apoplectic seizure, would have been considered a very dangerous circumstance, were it not in some degree accounted for by a slight injury of the head she received during the first fit. But he believed the irregularity of pulse the most serious symptom, as it indicated a cause of the disease to be in a part of the brain which influenced the involuntary muscles, as well as those of the voluntary kind.

The history of this case, he proceeded, was, that during the day of the 10th March, she felt sick at stomach, and experienced several fits of vertigo, with severe headach. During the night she left her bed, and felt herself immediately powerless, and unable to regain it. She then became insensible, and fell down, and is unconscious how long she continued so. By the fall, she received a cut in the back of the head, which had healed on admission. The day after the attack, she was moderately bled, and a blister was applied to the nape of the neck; her symptoms continued, as above described, until she was removed to the infirmary, on the 10th day after the attack. Under these circumstances, he, Dr. D. considered the true indication of treatment was, to prevent any return of cerebral hæmorrhage; to which cause he conceived the statement of the case entitled him to refer its various phenomena; she was accordingly bled to ʒxviij, and had a mixture of the sulphate of magnesia, with tart. emetic. The next day little effect was observed from the venesection or mixture; the pulse, on the contrary, was increased in frequency (80), and was as strong and irregular as before: the headach also continued. Being unwilling to repeat the bleeding, he directed 24 leeches to the temples, croton oil to be taken internally, and an enema of castor oil to be thrown up: following day (12th of disease) report was as follows: "Leeches bled well, enema operated briskly, several stools, partly involuntary, involuntary micturition, headach relieved, pulse 70, legs angular." Notwithstanding the unfavourable circumstance of the involuntary fæcal and urinary discharge, the torpor appeared now to decline; a dose of eleterium was given, and next day she appeared considerably improved; the pupils moved freely; she had recovered the command of motion over the lower extremities, from the knees down, and the pulse was of the natural number, and regular in its beats.

On the 15th day of her illness, she again suffered a great exacerbation; during the night vomiting came on, and was succeeded by violent headach; the pulse became as irregular as ever, and the pupils were again contracted; bleeding was had recourse to, and next day she was again better. After some days had elapsed without any return of bad symptoms, he considered the alcoholic extract of nux vomica might be legitimately employed for the purpose of accelerating her recovery of the power of voluntary motion. With respect to the efficacy of this remedy, Dr. Duncan said, he had no great faith in it; besides, its administration required great caution, as it would be decidedly pernicious in the acute stage of the disease, or while any tendency to sanguineous apoplexy remained. In this case, it was given in the usual doses; and whether from the medicine, or nature alone, great amendment speedily took place: she has now recovered command over all the voluntary muscles, except those of the arm, which, he should remark, were always the last to regain their original condition, but which, he believed, would also be restored in this case. The prognosis now was as favourable as it was before the reverse; and she required no treatment further than a moderate course of aperient medicines.

[This patient was dismissed, entirely cured, on the 6th of April, without any change having been made in her medicine.]

April 6th, 1830.

FATAL CASE OF FEVER.—MILIARY TUBERCLES.—ABRASION OF THE MUCOUS COAT OF THE STOMACH.

Dr. Duncan stated, that the case of the young woman, Anne M'Kay, had terminated fatally. According to his usual method, he would read his notes of the dissection first, and then compare them with the symptoms of the case. On external examination, the body appeared considerably emaciated, and the left side of the chest was remarkably sonorous on percussion, while the right side was unusually dull. On opening the abdomen, it was found that this sonorousness resulted from an unusually disturbed condition of the stomach; the appearance of the abdominal viscera was, on this account too, rendered very unusual; the colon ran across just beneath the umbilicus, and the liver protruded deeply beneath the false ribs; the stomach, externally, was redder than natural, a circum-

stance more especially remarkable, when its distended condition was considered, which would distribute the blood more extensively over its surface; within, the stomach contained a certain quantity of greenish fluid, and an accumulation of air, by which its distention was principally produced; the mucous coat was softened; in several places altogether abraded, and in others presenting an appearance he never before observed, namely, with pieces of the membrane hanging detached and loose. The duodenum, generally, was injected with red points, but free from ulceration; the mucous coat of the rectum was unnaturally red; the glands around the valve of the colon were tumefied; the texture of the spleen was tuberculated, and the pancreas of a schirrous hardness.

The lungs presented a granular mass, composed of myriads of minute tubercles; not one could be found larger than a pin's head, and suppuration could no where be detected, it constituted, in fact, an example of the miliary tubercle of Bayle. The bronchial glands were very much enlarged, and thickened in some degree, even to compression of the origins of the bronchi; they were in some places partially melanosed; when cut into were found of a black colour, and in some of them the process of softening had commenced. The lungs throughout exhibited marks of unusually acute inflammation, and in the cells was contained a considerable quantity of muco-purulent matter; various portions of them sunk in water, especially those parts in which the miliary deposition was most abundant. The heart was perfectly free from disease.

The patient was but 17 years of age, and was admitted in an advanced stage of fever (the 13th day). Her leading symptoms were these:—cough, occurring in paroxysms; sometimes excessive vomiting, followed by copious expectoration of frothy mucus, pain under the sternum, increased by coughing, or deep inspiration; pains of limbs; great thirst, and anorexia; respiration 36; pulse not very frequent, never over 100; the skin unusually moist, as she sweated much, a symptom which prevailed through the entire course of her disease; the tongue was rather dry, not florid; bowels slow, on the day of admission, but she stated that she had laboured under diarrhœa till the preceding day. Examined by the stethoscope and percussion; the sound was clear over the lower part of the left and lateral portion of the thorax; elsewhere very dull; sound of respiration, inaudible in many places; where heard, sharp and puerile in the regions of the thorax corresponding to the roots of the lungs.

On admission, her disease was of twelve days' duration, and was ascribed to exposure to cold during the flow of the catamenia; immediately after this exposure she had rigours, followed by soreness of the throat, loss of voice, pain along the trachea, with copious expectoration, accompanied by cough, and hurried, though not difficult, respiration. The only internal remedies employed were purgatives, and a blister was applied to the throat with some relief. Immediately after admission, an enema was administered, and she had a tartar-emetic solution. Next day pain of chest was greatly relieved; she had expectorated a quantity of watery fluid, and her chief complaint was muscular pains. At this period, Dr. Duncan said, he did not at all anticipate the fatal termination of the case, nor was he aware of the great extent to which disorganisation had proceeded in the lungs. On the second day after admission, she was reported to have passed a bad night, and to have suffered from severe paroxysms of coughing; she complained of nausea and retching; her skin was very warm; pulse frequent and full; respirations 36, laborious. The tart.-emet. solution was continued, and she was bled to ℥xij. It was now the 15th day of fever, and many practitioners, Dr. Duncan observed, felt timid at venesection at so late a period of that disease, and there was no doubt but it was often dangerous after the seventh day; yet this caution was merely applicable to cases of general or simple fever, for whenever local symptoms occurred, they were to be combated in the usual manner; in a late period of the fever, it would always be found easier to remedy any debility induced by the evacuation, by appropriate stimulant treatment, than it would be to obviate the ill consequences of unrestrained inflammation. The spasmodic character of the cough just noticed prevailed through all the subsequent progress of the case; as for the nausea, it was difficult now to determine whether it depended on the affection of the mucous coat of the stomach, or was the effect of the antimonial solution. In this case, the blood drawn was natural in appearance. The following day the face was pale, the lips slightly livid, the respiration was more difficult, but deep inspiration caused no pain; she complained of nausea, with some diffused pain over the abdomen; she had passed four stools with tenesmus. The tart.-emet. sol. discontinued, and infusion of catechu given in the usual manner.

On the 5th March (17th day of disease), she complained of considerable pain under the sternum; her hands trembled, she felt sick, but did not vomit; leeches were applied to the sternum, and she had an anodyne draught; the leeching afforded considerable relief, and she slept after the draught. For some days after this she seemed greatly improved, and some hope

was entertained of her ultimate recovery; but on the 10th March, a sudden and severe exacerbation took place; the respirations were 40; pulse 120; no local pain complained of. A blister was applied to the chest, and the respirations became rather more tranquil, but from this day all her symptoms assumed a worse appearance, the pulse remaining steadily at 120, and of that character usually noticed in fever attendant by some external suppuration; such was not the case here at that time, but subsequently the blistered surface remained open, and the hips and sacrum became inflamed; her symptoms, occasionally, were modified in their character; on one day she was free from thoracic uneasiness, and on the next the paroxysms of coughing were as severe as ever. For three days before her death signs of debility became prominent, and the sulphate of quinine was employed, improperly enough, he (Dr. Duncan) now believed; it, however, produced no marked effect, as she died on the 28th March.

In concluding his account of this case, Dr. Duncan observed, it was now evident, from the great extent of peculiar morbid alteration, that the chances were against recovery, whatever treatment was employed. It became a subject of curious speculation, whether the tubercular degeneration described in the dissection was only developed in the course of the fever, or whether its occurrence had preceded that disease. It had been, he conceived, established by the observations of his colleague, Dr. Alison, that tubercle was readily excited by, or, in other words, was the consequence of, inflammatory action. In this case, he (Dr. Duncan) conceived it very probable, that the deposition of tubercle was a consequence, or symptom of a fever induced by other causes. It might, on the other hand, be asserted, that the fever was only aggravated by the deposition previously existing, and this opinion would be, in some degree, strengthened by the pulmonary symptoms which marked the very commencement of the case; there was, however, no account of any hæmoptysis, cough, or other mark of pulmonary irritation, existing any time *before* the febrile accession. The solution of the question, however, was of little consequence to the patient, as had she survived the fever, he had no doubt she would speedily have fallen a victim to phthisis pulmonalis.

ON THE MEDICAL SERVICE OF THE EAST INDIA COMPANY.

Letter IV.

To the Editor of The Lancet.

Sir,—Before proceeding further in the consideration of the ultimate and sole recompense to medical officers of the East India Company's service, that is, their retiring pensions, it may be proper to mention the form of admission, at the India House, of recruits for this establishment, which is well calculated to deceive. It is this; that "assistant surgeons are permitted to proceed to their respective presidencies, Calcutta, Madras, or Bombay, as the case may be, to practise as surgeons, and to be admitted on the establishments as vacancies may occur." This form has been observed for the last ten or twelve years. To practise as surgeons, where?—Upon whom?—For what? The thing is quite absurd, and ridiculous; and merely "ad captandum"—to deceive, by giving an idea that, independent of the high prospects which the Company's service holds out, money is to be made in India, even on landing, by private practice! It is but fair, however, to mention, that, according to the present writer's information, no one has hitherto been left to absolute starvation in this way. Medical officers, shipped for India, in compliance with requisitions to the Court of Directors from the several presidencies, have hitherto been wanted to fill up vacancies, occasioned by casualties, long before the period of their arrival in India. At the presidencies, medical practice is in the hands of two or three Company's surgeons. It is only at the Presidencies, that medical officers are paid for professional attendance. At out-stations, a "honorarium," or fee, to the medical attendant, is seldom, if ever, dreamt of; so that, on the Madras establishment, at least, not above one surgeon in one hundred, after from twenty to thirty years' service, happens to receive, in fees or presents, a sum equal to the payment of his passage-money back to England, or 2,000 rupees. Medical men are not prohibited from receiving presents, or fees, in India, on account of professional practice; but their patients (excepting at the Presidencies, or towns of Calcutta, Madras, or Bombay) must necessarily be Company's servants; and it is not obligatory on them to pay for medical advice and attendance; whereas, the attendance of medical men, on all occasions, is obligatory, with or without a fee. Medical men never expect, it may be said never accept, a remuneration from the military; and civilians, who alone

are able to pay them, very seldom think any return for their assistance necessary. It has been ruled, however, by the supreme government, and by the subordinate governments, that it is the duty of every medical man, to attend at the call of any person within his reach who may want his services, without fee or reward, and at his own expense for personal conveyance. Let it be understood that such unrequited summonses are often frivolous, and at distances of upwards of fifty miles. Disobedience of these calls renders the surgeon liable to trial by court-martial; or to suffer by the more usual mode of punishing medical delinquents —marching them incessantly about the country to the most distant places, until they sink under fatigue, privation of every sort, despondency, and the malignant influence of the climate. From natives, who seldom ask the help of an English surgeon, the compliment seldom exceeds a small present of fruit, or sweetmeats, a fowl, or a lean goat, or sheep, and, on very extraordinary occasions, perhaps, a well-darned shawl, not worth 20 rupees, and which has been an heir-loom in the family for the best part of a century. So much for the practice of a surgeon in India.

The following are the regulations for the retirement of military and medical officers of the East India Company's service.

1.—"Every military officer (with the following exceptions) after twenty-five years service in India, three years for one furlough being included, is allowed to retire with the pay of his rank, within 12 months of his arrival in Europe; but such pay is to be the same only as that allowed to officers of infantry.

2.—"Members of the medical board, who have been in that station not less than two years, and not less than twenty years in India, including three years for one furlough, are permitted to retire from the service, and allowed 500*l.* per annum; and 700*l.* if they have served five years in that station.

3.—"Superintending surgeons, who have been in that station not less than two years, and whose period of service has not been less than twenty years, including three years for one furlough, are permitted to retire from the service, and allowed 300*l.* per annum, and 365*l.* if they have served five years in that station.

4.—"All other surgeons, and assistant-surgeons, attached to the military, are permitted to retire from the service, on the pay of their rank, after having served in India not less than twenty years, including three years for one furlough."

Read these regulations affecting the medical part of the service in inverted order, and the unfairness and absurdity of the provision of service of twenty years—unnecessarily repeated in Nos. 3 and 2, will become apparent. The thing is sufficiently mystified; and by reading the 2nd only, or the others inconsiderately, a person searching the East India register for information, would say, "Why this is not so bad! Here is obviously the possibility, nay probability, of 700*l.* a year being had, by medical men, in the East India service, in less than twenty years; otherwise the directors of the Company would not thus, year after year, publish orders to prevent its recurrence." That they do, however, thus publish a caveat against the occurrence of an impossibility, is, nevertheless, the plain truth. A medical officer entering this service, has to live his way up from the bottom to the top of the list of surgeons of the Presidency to which he belongs, to succeed as a junior superintending surgeon, and to ascend the list of superintending surgeons, to come to the medical board. The time necessary to effect this, was given in my last letter, to which I beg to refer. The average service of the senior members of the three medical boards in India, at this moment, is thirty-seven years; and none of them are yet entitled to the boasted prize of 700*l.* a year pension. There is no short road to the situations of superintending surgeon, and of members of the Boards, as the Court's regulations above quoted, Nos. 3 and 4, would insinuate. The following corrections, in the above orders, would make them correspond with the real state of the respective cases.

2.—Superintending surgeons, whose period of service in India, in a medical capacity in all, may not have been less than thirty years; but who, from misfortune, ill health, or otherwise, shall not have been able to complete two years' service as superintending surgeons, are permitted to retire from the service, and allowed the pay of full surgeons only; viz. 191*l.* 12*s.* a year.

Superintending surgeons, whose period of service in India, in a medical capacity, in all, has not been less than thirty-two years, and who shall have completed two years' service in addition, as superintending surgeons, are permitted to retire from the service, and allowed 300*l.* per annum; and, after five years' additional service, making in all thirty-nine years' service in India, they are permitted to retire on 365*l.* per annum.

3.—Members of the Medical Board, whose period of service, in all, in a medical capacity, has not been less than forty years, but who shall not have completed two years' service as Members of the Board, are permitted to retire from the service, and allowed 365*l.* per annum, being their pension in their last grade, of superintending surgeon.

Members of the Medical Board, whose period of service, in all, in a medical capa-

city, has been forty-two years, and who shall have completed two years' service in the Board, are permitted to retire from the service, and allowed 500*l.* a year; after five years' service in the Board, and forty-seven years' service in India, they are allowed 700*l.* a year.—See case of the late Mr. Gibbs, first member of the Medical Board of Calcutta, in Letter III.

4.—Surgeons, of whatever length of service, from seventeen to thirty years' actual service, and residence in India, are permitted to retire from the service, and allowed the pay of captain, 191*l.* 12*s.* per annum.

The following Table exhibits the old rate of full-pay to military, clerical, and medical officers of the East India Company's service on retirement, the new rate of full-pay, and the recent additions. Particular attention is requested to the pay of chaplains.

Rank.	Old Rate. £.	s.	d.	New Rate. £.	s.	d.	Late Additions.	Remarks.
Colonel	456	0	0	-	-	-	- - -	Exclusive of off-reckonings 700*l.* to 350*l.* a year.
Lieut.-Colonel	365	0	0	-	-	-	With late improvements on retirement.	
Member Med. Board	500	0	0	*500	0	0	† 700	After 40 years' service.
Superin. Surgeon ..	300	0	0	*300	0	0	† 365	After 30 years' service.
Major	273	15	0	292	0	0	—	
Chaplain	273	15	0	292	0	0	365	After 15 years' service!
Captain	182	10	0	191	12	0	- - -	After 22 years' service.
Surgeon	182	10	0	191	12	0	- - -	After 17 to 30 years' service.
Lieutenant	91	5	0	118	12	6	—	
Assist.-Surgeon	91	5	0	118	12	6	—	——
Ensign and Cornet	73	0	0	95	16	3	—	——

* Of two years' standing as such.
† Of five years' standing as such.

Half Pay on Retirement.	£.	s.	d.
Lieutenant-Colonel	200	15	0
Chaplain, after 10 years' service	200	15	0
Chaplain after 7 years' service..	173	7	6
Captain and Surgeon, after 13 years' service, and less than 22 and 17 years' respectively....	127	15	0
Lieutenant, after 13 years' service	73	0	0
Ensign after ditto.....	54	15	0

[Every military officer (with the exception of superintending surgeons and members of the Medical Boards) may retire on the pay of his rank, after having served twenty-two years in India. Lieutenant-Colonels on promotion to be Lieutenant-Colonel Commandants, may come home and remain for an indefinite length of time without relinquishing the service, succeeding in their turn to their share from the off-reckoning fund—300*l.* to 400*l.* a year.]

Civilians have four times the pay of military officers in India, generally speaking. The late reductions have affected the military exclusively. They have ruined the medical department, and this ruin has been compensated by a boon, as we have seen, most kindly and considerately, for the Company at least, placed out of the reach of the sufferers by the Court of Directors. The fortunes of civilians in India remain untouched, while the Directors have generously determined on raising the pensions of civilians after twenty-five years' service in India, to 1500*l.* per annum, instead of the 1000*l.* the former allowance,—for which the said civilians may thank their stars, or rather the STARS of their friends, the voters for Directors and Proprietors of East India Stock, and the kind consideration of the said Directors for their constituents. Can any one of these very generous rulers of the East, from their Leadenhall Committee Rooms, contradict the unavoidable inference by mentioning the name of any relative or "protégé" of a Director or high-starred Proprietor who has been put in the way of succeeding "in time" after stated service, as the Chairman calls it, to the tempting otium cum dignitate with 700*l.* a year, for their superannuated, worn-out medical servants in India.*

* Some of our readers, perhaps, will obligingly furnish the means of comparing the present pay, and the retiring pensions of the Honourable Company's medical servants in India, with the pay and pensions of the host of pampered dependants at home, from the secretary downwards, who yawn out their long long day, from eleven o'clock until three, and read newspapers, and drink their

The Medical Board of Madras in addressing the Government in 1826 on the inadequacy of the means of retirement to the seniors of the medical profession in India, states "that it has probably been a detriment to the public interests in this, more than in any other branch of the service, that the higher situations of medical control have been occupied, often for a long series of years, by indigent servants at advanced periods of life; and that the only appropriate remedy for this evil will, probably, be found in the principle, distinctly recognised by the Honourable Court in reference to their civil servants, of granting liberal annuities to the seniors 'on their retirement,' as being, in the opinion of the Directors (given in their despatch, Feb. 26, 1808), calculated to answer useful and wise ends (for their civil friends to wit),—as providing for unexpected loss of fortune,—and as occasioning the return of the Company's (*civil*) servants by a quicker movement than would otherwise take place, and thus securing to the Company the service of Europeans in the most active period of their lives, and making way for the advance of younger servants." This is the theory and practice of the Directors as affecting their civil servants only. The very opposite holds good with them as regards their medical officers.

We are now to contrast the provision which the directors have made for their clerical with that of their medical officers. The education of a chaplain, including school and college expenses, does not exceed 1000*l*. He proceeds to India at as early an age as a medical man does; has a good roof always over his head, and there no very severe duty to perform; and after fifteen years' service in India, he is allowed to retire on 365*l*. a year, being just double the pay allowed to a surgeon who may have served twice the time; the chaplain having, besides, received major's pay in India from the moment he entered the service, that is, 575 rupees a month; while the surgeon receives the pay of lieutenant, only 224 rupees for the first twelve or fifteen years of his service, and for the next fifteen years, the pay of captain, with the occasional batta only of the next superior rank.* If the provision for the parties named were estimated by their utility, instead of their interest at the India House, the rate and order of the remuneration for services would be precisely the reverse of what it now is.

The ecclesiastical establishment in India consists of one bishop on a salary of 5000*l*. a year, three archdeacons on 2000*l*., seventy-three chaplains on major's full pay and allowances, 575 rupees a month, or 580*l*. a year, and six Presbyterian ministers on the same pay!† A considerable proportion of the chaplains are fixed at the presidencies, the remainder are established at some few of the principal stations and garrisons. From the fewness of their number, their duties every where else devolve on the laity. The reading of prayers at the interment of the dead, is generally performed by an officer over the remains of his deceased comrade or fellow soldier. The celebration of marriages falls, as a civil contract, to the lot of civilians, while baptisms are left to a future opportunity.

Let us now see, by a comparative statement, in what proportions the Honourable Company compensate and appreciate the labours of their two classes of servants—*soul*-curers and *body*-curers.

Pay on Retirement.

"A chaplain, after eighteen years' service in India, including three years for one furlough," (that is, after fifteen years' actual residence in India), "is allowed to retire on the pay of lieutenant-colonel, 365*l*. per annum."

"A medical officer, after twenty years in India, including three years for one furlough," (that is, after seventeen years' service in India,) "is permitted to retire from the service on the pay of captain, 191*l*. 12 a year." After twenty and thirty years' service in India, the same, 191*l*. 12*s*.

"A chaplain, if compelled to quit the service on account of ill health, after ten years' service in India, is allowed to retire on the half-pay of lieutenant-colonel, 200*l*. 15*s*. a year.

"A medical officer, if compelled to quit the service on account of ill health, after

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chocolate in the well-warmed and carpeted snuggeries of Leadenhall palace. We may almost venture to assert that of the great men's dependants, elevated from their domestic rank of butler or valets, to be doorkeepers and messengers, even the very lowest amongst them, is better paid than is an assistant-surgeon after thirteen years' service in India.—Ed. L.

* It is understood, that the dignitaries and ecclesiastics of the Roman Catholic faith, are very soon to be admitted on the Company's Indian establishments. We are not informed whether this liberality is to extend to the priests of the great temple at Juggernaut, and other similar places of devotion; but it is not unlikely, as the Company are the liege lords, and collect the revenues from pilgrims and other sources of these great sinks of vice and iniquity.—Ed. L.

† See last volume of The Lancet, pp. 212, 367, and 360.

ten years' service in India, is (or rather was) permitted to retire on the half pay of lieutenant, 73*l.*; after six years, on the half pay of ensign, 54*l.* 15*s.*; after thirteen, on the half pay of his rank, that of full surgeon, if fortunate, 127*l.* 15*s.*; or of lieutenant, if the reverse, 73*l.*

"A chaplain, after seven years' residence in India, is allowed to come home on furlough, and receive the pay of major, 292*l.* a year; should he come home from sickness prior to this period, he is to receive the pay of captain only."

"A medical officer, after ten years' service in India, is allowed to come home on furlough, and receive the pay of lieutenant, 95*l.* 16*s.* 3*d.* a year."

The reasons for a *better* provision having been made by the directors, than the very miserable one they have thought sufficient for medical officers, are manifestly two-fold; 1st, as a matter of calculation, a *sine qua non* in the Honourable Company's rule-of-three-government of empires; it involves, comparatively, no great expense, there being only seventy-nine chaplains in India on the three establishments; and, 2dly, It pleases the strong parliamentary party of "soi-disant" *saints*,* who have an interest in the matter, and secures their votes when the charter comes to be discussed. A chaplain has not too high pay, either in India or at home; the inference in regard to the medical branch of the service, need not be drawn.

In conclusion, it should be known, that out of the medical staff of the whole of the Company's army in India, on the three presidencies, consisting of 723 officers, such are the injustice and illiberality of the directors of the Company to this class of its servants, that it does not allow of quite four retirements a year, in an average period of twenty-four years, those made from disease and dire necessity included; and that the compensation, as an expense to the Company for each individual so retiring, even including the higher pensions, does not exceed 200*l.* 6*s.* 10*d.* on the average of the whole,—affording an average pension on retirement to 62 full surgeons, compelled by broken health to quit the service, after twenty years' service, of 131*l.* 2*s.* 3*d.* a year; and to five assistant-surgeons, under similar deplorable circumstances, after thirteen years' service, the average pension of 38*l.* 6*s.* 6*d.* per annum, as is proved by the following abstract, for the detailed particulars of which, the reader may refer to a book entitled "An Inquiry into the State of the Indian Army," by Walter Badenach, Esq., Bengal Army. London. 1826.

* "It is thought, that to practise roguery successfully, the best method is to become a saint."—*Sunday Paper, 21st February*, 1830.

ABSTRACT of Retirements of Medical Officers from the Indian Army of the Presidencies of Bengal, Madras, and Bombay, from 1796 till 1820, both years included—24 years.

Rank.	Nos.	Designation and Rate of Pension.	Average Years of Service.	Total or Aggregate Amount of Retired Pensions, or Pay.		
				£	s.	d.
1st.	9	Members Medical Board, 500*l.* ea.	40	4500	0	0
2d.	14	Superintending Surgeons, 300*l.* ea	30	4200	0	0
	39	Surgeons, at 182*l.* 10*s.* each	20	7117	10	0
3d.	1	Surgeon, at 100*l.*	Ditto	100	0	0
	20	Surgeons, at 91*l.* 5*s.*, half-pay..	,,	1825	0	0
	1	Surgeon, at 60*l.*	,,	60	0	0
	1	Surgeon, at 36*l.* 10*s.*	,,	36	10	0
4th.	4	Assistant-Surgeons, 36*l.* 10*s.* ea.	13	146	0	0
	1	Assistant-Surgeon, at 45*l.* 12*s.* 6*d.*	,,	45	12	6
4 grades	90	.....	103	18,030	12	6

Being an average annual remuneration of 200*l.* 6*s.* 10*d.* to each member of the medical service who has retired in the above twenty-four years of privation and suffering, to compensate an average period of twenty-five years and three-quarters,—commensurate to a waste of life of upwards of thirty years in Europe,—twenty-seven years is the present verage service of the senior surgeons on all the presidencies in India, and twenty-two years is the average practicable servitude of all surgeons. Surgeons, therefore, can only

calculate on the retiring pension of 191*l.* 12*s.* to survivors, within an attainable period. The highest pension of 700*l.* a year, insufficient as it is, is not attained by more than 1 of 600 who enter this service. I cannot conclude this subject better, than by recommending to your junior readers the opinion of the late Sir Thomas Munro, which is expressed with great eloquence and truth, and applies remarkably well to our present subject. When his brother was constrained by ill health to leave India, Sir Thomas Munro thus justifies the step:—"I consider life as valuable, in proportion to the comforts and pleasures it affords—and I would rather have them strewed through its whole course, than treasured up for its last moment. It appears to me little better than madness, for a man to expend his best days in toiling through a perpetual succession of irksome scenes, from the absurd hope of retiring to happiness, when the period of enjoyment is gone."—*Life and Correspondence of Sir Thomas Munro.*

May I not now ask—What person amongst the humblest retainers of physic, would exchange his situation, or views in life, for such prospects as those which I have described, and such as the East India Company's service does, in reality, afford to its medical servants? If there be any such, the Directors have an undoubted right to deal with them as a cheap commodity, and to purchase their services on the lowest terms.

I request you, Sir, to accept my best thanks, for the honour you have done me by the insertion in your valuable work, of these, I fear, dry, and, to many of your readers, uninteresting details. The object for which they were put together will be fully answered, if they contribute to expose injustice, and prevent deception, and save some of the juniors of our profession from exile, privations, hardships, sickness, poverty, and a grave, in India; or the, perhaps, sadder alternative, of surviving, to drag on in England, after his return with ruined health, a premature, joyless, isolated, and destitute old age; his tenderest ties, his dearest sympathies, his best hopes, broken and sacrificed to the service of sordid, selfish, and unfeeling task-masters; and the hopeless anguish of his recollection embittered, by contrasting his ill-furnished attic, and the doleful half-yearly pittance of his *existence money*, with the splendid equipage and sumptuous abode of his wiser fellow student, who, perhaps, with less talent and merit, had the good sense to remain at home.

X.

THE LANCET.

London, Saturday, May 1, 1830.

The Question of The Anatomy Bill still occupies the attention of several members in both Houses of Parliament, and it is not yet exactly determined in what shape the new measure shall be introduced for discussion before the legislature. The Colleges, the monopolizing traders in human misery and in human blood, are exercising a very active interference, and are endeavouring, by every means in their power, to obtain the control of the executive authority prescribed by the intended Act. But it is as well for Members of Parliament to be informed, that no legislative measure for controlling the practice of teaching anatomy, that shall give exclusive authority to the monopolizing corporations, will prove either beneficial to the public, or agreeable to the feelings of the members of the medical profession; nor will any Act of Parliament be received by the community with other feelings than those of the most hostile indignation, unless it repeal that portion of the existing criminal code of this country, which consigns the bodies of murderers to dissection; nor, if it omit to prohibit, under the infliction of the severest penalties, the horrid practice of buying and selling the dead. It is the object, we believe, the sincere object, of the promoters of the Bill, to exalt the character of the profession, to extend the boundaries of science, and to limit the extent of human suffering. Further, it is their sincere desire to protect the public from a repetition of those horrid crimes which were committed in Edinburgh, and which, there is too much reason to fear, are not without their parallels in London. Now, mark! It was the price paid for dead bodies, that led to those murders.—Those murders led to the introduction of the late Bill into Parliament. Nothing, there-

fore, can be less rational, less illogical, less consecutive, than to legislate on this subject, if the measure do not strike at the very *root* of the evil that is calculated to lead to the commission of similar atrocities. It is the PRICE paid for the dead, that leads to the murder of the living. How, therefore, are you to protect the latter, unless the sale of the former be entirely abolished. The Act may prescribe that bodies shall not be received by anatomists, excepting under the signatures of certain persons; but will reckless monsters, who do not hesitate to commit murder for a few paltry pounds, feel any hesitation in adding to their guilt, the comparatively venial crime of forgery? The supposition is really too absurd to admit of discussion.

The Bill, therefore, in our opinion, either to be useful, or at all palatable to the public, should embrace the following features, which we must ever regard as the leading ones.—

1. The repeal of that portion of the criminal law which consigns the bodies of murderers to dissection.

2. That no power or authority over the teachers of anatomy be given to the Colleges of Physicians and Surgeons, under their existing charters.

3. That any person convicted of buying, or of selling, the dead body of a human being, under ANY circumstances, be transported for not less than seven years.

4. That it be lawful for ALL persons who may possess *unclaimed* dead bodies, if the same be not claimed within four days after due public notice, to give up the same to the teachers of anatomy for the purposes of dissection.

A legislative enactment founded upon any other principles, may increase the existing prejudices against the practice of dissection to a degree almost fatal to the cultivation of the science of anatomy.

THE newspapers are teeming with advertisements respecting the "removal of hospitals," "hospital committees," hospital building funds," &c. Really, we wish that the subscribers to "hospitals," as they are called, would look a little more narrowly into the motives of the getters up, and of the pretended charitable supporters of these institutions; for there is more of downright hypocrisy, humbug, and intrigue, practised in them, than can possibly be imagined. If the rich are anxious to bestow their alms upon the afflicted and the deserving, why not visit, or why not employ some friend to visit, the cheerless abodes of the distressed. The value consists not in the gift, so much as in the manner in which it is bestowed. At least half of the money which is now subscribed for the benefit of the afflicted in our hospitals and dispensaries, never reaches, in any form, the persons of the poor. Why should the money be squandered in erecting splendid and gorgeous buildings? True charity is less ostentatious, less obtrusive, than thus to display itself. They appear like barriers, set up by the aristocracy, to prevent the nearer approach of the poor. If the rich be anxious to bestow alms, let their own hands be the medium of conveyance. If they be anxious to supply medical skill, let them ensure the attendance of their own FAMILY SURGEONS, in whose humanity, ability, and integrity, they know they may safely confide.

THE members of the medical profession, during the past week, appear to have been in a state of intense excitement on the subject of the dinner announced for this day. The list of toasts published in our last, although presented to us by one of the stewards as the final list, had not been submitted for the approval of the honourable Chairman; but no blame attaches to the stewards on this point, as Mr. HUME, unfortunately, was out of town, and did not re-

turn until Monday. Not less than six of the stewards have authorised us to announce, that they would resign, rather than be present at a dinner where such toasts were to be drunk as those published by us last week. The other stewards have since held two or three meetings, and the toasts have undergone a partial, but, we believe, not a final revision; arrangements calculated to give the best possible effect to the proceedings are now in progress, and the dinner will, in all probability, be postponed for a fortnight; but up to the moment of our going to press, no other day has been fixed upon. The whole affair has assumed a new character, and Mr. Hume will be supported in the chair by Mr. O'Connell, and other influential members of the House of Commons. The profession will at once perceive that incalculable benefit may result from laying before such important members of the senate, a statement of its innumerable grievances. These gentlemen attend the dinner, not as politicians, but as honest and independent members of the House of Commons, who are anxious to be made acquainted with the wants and feelings of a large, important, and most influential class of their fellow citizens. We hope to be enabled to announce the full and final particulars respecting this dinner in our next Number. The following is a revised, but not an "unalterable" list of the toasts, by which it will be seen, that amongst several of the omissions, that of the *medical press* is one. It is at any rate an improvement, though even now the catalogue is not quite perfect.

1. The King.
2. The Duke of Clarence and the Royal Family.
3. The Right Honourable Robert Peel, the reformer of laws and fiscal abuses.
4. The Jury of our Countrymen, who returned the verdict so important to the profession; and the health of Mr. Handy, by whose spirited exertions the same was obtained.
5. That enlightened and impartial judge, the Right Honourable Lord Tenterden, who presided at the trial.
6. The Profession of Medicine upon principles which confer respectability upon its members, and promotes the interest of the public.
7. Public approbation the basis, and unanimity of the profession the best means of giving effect to the honourable and beneficial object of this meeting.
8. The Physicians of the United Kingdom.
9. The Surgeons of Great Britain and Ireland.
10. The Apothecaries of the three Kingdoms.
11. The Schools of Medicine all over the world.
12. The Charitable Medical Institutions.

It is not true that Mr. Brodie has been in attendance upon his Majesty.

A Dissertation on the Influence of Heat and Humidity, with Practical Observations on the Inhalation of Iodine and various Vapours in Consumption, Catarrh, Croup, Asthma, and other Diseases. By T. Murray, M.D., M.R.C.S., &c. London: Longman and Co. 1829. 8vo. pp. 306.

It would seem, from some hints which are dropped in the preface to this work, that the author, who resides at Belfast, is at variance with most of his professional brethren there, and determined to write a book which should at once confound his adversaries, and establish his own claims to superior knowledge and wisdom. If such were his object, however, he could hardly have chosen a method by which it was less likely to be attained. So strange a production we have seldom met with, and never were we so much at a loss to characterise a work in general terms as on the present occasion. Absurd theories and simple facts, observations pathological,

anatomical, physiological, pharmaceutical, chemical, and philosophical; new arrangements of diseases, and new methods of treatment, mingled with very numerous Latin quotations, not only from Hippocrates and Celsus, but from Cicero, Pliny, Lucretius, Virgil, Horace, and Ovid, are scattered about in a disorder, which prevents even an attempt at analysis, and almost sets criticism at defiance. We shall, therefore, relinquish a task which we are hopeless of accomplishing, and only endeavour to give our readers some idea of the nature of the book by a few brief extracts and notices of particular subjects; and, first, we will take up a few of the author's physiological theories.

It has been almost universally admitted, that exhalation, or transudation from the skin and serous membranes, takes place from the extremities or open mouths of the capillaries, or minutest arteries. Dr. Murray, however, is of a different opinion; he thinks that the fluid passes not from the open mouths, but through the sides of the vessels. We shall here give his own words:

"I might venture to say, from some trials, that the arteries exhale *inter dilatationem*. At the arterial diastole, the coats of the vessel are elongated,—the annuli, or rings, of the middle coat are separated in some degree by the distention; this coat is the only one not pervious in its matter, which resembles that of the brain in colour, insensibility, structure, and chemical qualities; the other coats, being cellular, are permeable; when wet and warm, a few inches of the artery is distended at each injection of blood, and I see no reason to forbid the notion, that during this distension and elongation, some of the aqueous or limpid part of the blood may be expelled through the arterial coats, the lymph passing between each ring of the middle coat; and that this limpid and colourless transfusion may be the nourishing part of the blood before it is fixed and deposited, and also the vehicle of most other exhalations."

This theory is so absurd, and the data on which it rests so false, that it would be an insult to the understanding of our readers, were we to refute the one, or contradict the other; equally unnecessary is it to make any observations on the following, which is, after all, nearly the same as the very silly one advanced by Sir A. Carlisle a year or two since.

"The spleen is a large spongy mass, on which the splenic portion of the stomach rests, almost in contact with the food about to be digested; and as it receives a very large quantity of blood hot from the adjoining heart, this warm stream may contribute caloric, as from a reservoir, to the stomach and its contents, until the alimentary pulp be raised to the temperature of the blood at its fountain head."

We will only notice one more theory, on which the author has expended no small number of pages, and for which he seems inclined to give himself no little credit: this *brilliant discovery* is, that animal heat is not generated in the lungs by the oxygenation of blood, nor in the capillaries, by its conversion from arterial into venous; in short, that its production has little or nothing to do with either respiration or circulation, but depends on *the absorption of moisture* from the atmosphere, and the conversion of this moisture *into a solid state*, precisely in the same way as heat is produced by slaking quicklime. Indeed, the author very ingenously asks, "Why there may not be a hydrate of fibrin as well as a hydrate of lime." Now, without adverting to the impropriety of explaining a vital process upon mere chemical principles, or to the fact of birds, whose skin is very ill fitted for absorption, having a higher temperature than man, of fishes being cold-blooded, &c., it might be sufficient to observe, that the quantity of fluid which passes out of the body is equal to, and even greater than, that which is taken in either by the skin or the mouth, so that even if heat were produced in the manner which Dr. Murray supposes, it would be in the same manner entirely lost, and the body, upon such principles, instead of being much warmer, would in most instances be even colder than the surrounding medium. So much for the author's theories; we will now proceed to the examination of a few of his new methods of treatment, some of which are almost equally absurd. Thus the author proposes, that "in capital surgical operations, such as on cavities and joints, and those for hernia, cæsarian section, intus-susception, &c." the exposed parts should be plentifully covered and fomented with warm oil; this would be "pouring oil into wounds" with a vengeance. The manner, however, in which he arrived at this bright thought, is still better than the invention itself:—

"I was first led to this practice by observing, that a plummer cannot join or unite two pieces of lead together, if he allows the rasped and metallic surfaces to remain a moment exposed to the air, as the shining metal would directly become grey with oxygen. This oxydized coating hinders his joining material (solder) from adhering or amalgamating with the surface of the lead. To prevent this action of the air, so soon as he has produced a clear surface on the parts of the metals to be joined, he instantly applies tallow, lard, or oil, to the polished parts, and then he may leave the lead exposed to the air, until it suits him to go on with his operation. 'Fas est et a fabro doceri,' &c."

The author is a great advocate for the use of the warm bath, but his arguments in favour of it are so poor and so confused, that he is not likely to make many converts. Still more strongly does he contend for the advantages to be derived from the application and inhalation of vapours, both simple and medicated; the former he recommends in most cutaneous affections, and in acute inflammation of the eye, nose, larynx, bronchiæ, &c.; the latter, in chronic inflammation and congestion of the same parts, and more especially in phthisis, of which he gives one case, which might have frightened even *Doctor* Long, and in which a cure was effected by the long-continued inhalation of iodine vapours, produced by diffusing three or four grains of very finely-powdered iodine in a quart of water, heated to 160°. This case, though very long, is but imperfectly given; and to judge from the preceding part of the work, we should not be inclined to attach much force to it, or to the statements on the same subject. The method of treatment is, however, we believe, new, and might, *a priori*, be expected to produce beneficial results, and we regret that the author did not confine himself to this subject alone, instead of producing a farrago, fit to be read only by the old ladies and *bas bleus* of Belfast, among whom it will, doubtless, greatly increase his credit and reputation!

Observations on the Disorders of Females connected with Uterine Irritation. By Thomas Addison, M.D., Asst. Phys. at Guy's Hosp., &c. &c. London: Highley. 1830. 8vo. pp. 96.

There are, certainly, few diseases, of which the diagnosis is more obscure, or the treatment more unsatisfactory, than those undefined, yet distressing, affections, to which young and middle-aged females are so often subjected, and which have sometimes been denominated hysteric, sometimes confounded under the more general epithet of nervous. Credit is, therefore, due to Dr. Addison, for having illustrated some of the forms of this disorder, pointed out their true source, and proposed a method of treatment more rational, more simple, and, apparently, more efficacious, than any hitherto employed.

The author is of opinion that, of late years, while so much attention has been paid to the constitutional origin of local diseases, the reverse has been neglected, and that in many cases of constitutional disturbance, the real cause, local disease, has been overlooked. The principal object, therefore, of this treatise, which is nothing more than a clinical lecture delivered at Guy's Hospital, is to show that certain of the disorders just alluded to, are dependent on and produced by uterine irritation; and are to be relieved not by general means, but by local ones; not by attacking the symptoms, but by removing the cause of them. The principal direct and local symptoms of this irritation are, painful menstruation, leucorrhœa, and especially tenderness on pressure in the hypogastric region; its predisposing causes are such as debilitate the system in general, and such as excite the uterus or disturb its functions, as too great exertion during the menstrual period, &c. The secondary effects of this local disease, the general symptoms, or those which have been usually considered as constituting the disease itself, as being almost always vague and undefined, are necessarily described at some length, we can, therefore, only notice the principal of them; these are irritable temper, low spirits, disposition to shed tears, fatigue on slight exertion, loss of appetite, great flatulence, and sometimes regular hysteric fits, with globus, &c. The patient is not unfrequently attacked by acute and severe pain in some part of, or all over the abdomen, especially in the hypochondrium, or below the left breast, in which case the author is inclined to believe that it is seated in the cardiac orifice of the stomach; as in the only case where he had an

opportunity of making an examination, and where it had "prevailed for a considerable period, and in a very aggravated degree," though he "examined the colon, spleen, heart, and stomach, with the minutest attention, the only indication of irritation he could detect was a ring of very delicate vessels, or, rather, a blush of redness surrounding the cardiac orifice of the stomach, such as might be supposed to be the result of any continued irritation or spasmodic action."

In the other cases, with one exception, he considers it as neuralgic, and does not pretend to indicate its exact seat. When it extends over the whole abdomen, it is very liable to be mistaken for peritonitis, and the author confesses that he has more than once committed this error, which may, however, be generally avoided, by attending to the state of the pulse, and the sudden changes which take place in the condition of the abdomen from extreme tension, to complete relaxation and softness. In the epigastric region the pain is generally of shorter duration, but of much greater intensity, and appears to depend on a spasmodic affection of the stomach. Although these various symptoms may, from their activity, sometimes require direct and immediate treatment, our principal attention, according to Dr. Addison, must be directed to the morbid state of the uterus, and this is best relieved by "cold astringent lotions injected per vaginam." Leeches, cupping, the warm-bath, &c., may sometimes be serviceable, but it is upon this simple measure that the greatest reliance is to be placed; where the irritability or sensibility is very great, cold, or even tepid water alone, may be employed at first, and afterwards the liquor aluminis comp., which the author has found more adapted to the purpose than any other astringent. The injection should be omitted during the menstrual period, and it is necessary to continue it for a long time after relief has been obtained, to prevent the recurrence of the disorder. With regard to the general treatment recommended by the author, it is hardly necessary for us to enter much into it; we will only observe, that he objects on the one hand to bleeding, except where the pulse is full and hard; and, on the other, to strong tonics, before the local disease has been subdued, especially where there is menorrhagia. In those cases where such medicines may appear necessary, he has found small doses of sulphate of zinc, with extract of gentian, or of bark, the most beneficial at first; afterwards, the more powerful ones, with the cold-bath, &c., may be employed with advantage; for the neuralgic pains of the abdomen, he recommends anodynes, especially the liq. opii sedat., with ammonia or camphor, and opiate or aromatic fomentations to the parts. He insists upon the necessity of preventing costiveness, and obviating the accumulation of fæces; but what is somewhat strange, seems to prefer oral medicines for this purpose to enemata, which latter would be both more efficacious and less irritating, and might be reasonably expected to have a beneficial effect, locally, on the uterus itself. With this one exception, we have no fault to find either with the method of treatment proposed, or, indeed, with the rest of the work, which is perfectly rational and intelligible, and appears to be written without bias and prejudice, and to be the result of much patient observation. We need not notice the cases given at the conclusion, as they illustrate, but add nothing important to what we have already stated.

SQABBLES AT THE WESTMINSTER HOSPITAL.

To the Editor of THE LANCET.

SIR,—As there appear to be innumerable difficulties amongst the learned of the Westminster Hospital, in the selection of the cases of patients proper for the care of physicians and surgeons, you will confer a singular obligation on the lay-governors of that institution, if you could furnish them with the means of deciding, by some indisputable rule, how the physicians' and surgeons' cases are to be distinguished from each other. The scenes of dispute between these two classes of officers are quite disgusting, and it is to be regretted that individuals, called "council-men" of the bodies to which they belong, should occupy the time of the Board with frivolous and personal disputes.

I am, Sir,

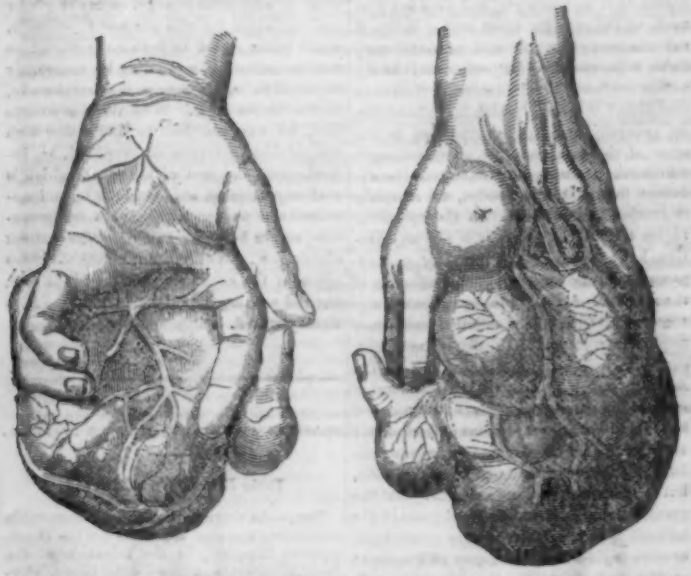
A LAY GOVERNOR.

Westminster Hospital, April, 1830.

SURGICAL CLINIC AT THE UNIVERSITY OF BONN.

PARTIAL EXARTICULATION OF THE FINGERS AND METACARPAL BONES.

J. P. Ritzen, ætat. 18, of a strong constitution, and apparently in the full enjoyment of general health, had received, in his infancy, a violent contusion of the middle finger of the left hand, by its being caught between a door and the post. In his eighth year, the first phalanx of this finger began to swell, so as ultimately to attain to five inches in length, and four in breadth; and at the same time the second phalanx, and subsequently the third and fourth metacarpal bones and the phalanges of the fourth finger became enlarged, and gradually attained an enormous size; the tumour of the first phalanx of the middle finger was by far the largest, and had latterly begun to increase very rapidly: the two fingers were changed into an uneven tuberculated mass, divided into several lobes; and by forcibly pushing the little finger and index towards the sides, the two last phalanges of the middle and fourth finger had undergone a very curious transposition, presenting the following appearance.



The tumours of the two metacarpal bones were confounded into one mass, and though contiguous to, were apparently not adherent to the metacarpal bone of the index, which appeared to be perfectly free from disease. The tumours were very hard; the weight of the hand considerably increased, so that the patient could hardly lift it up; the thumb, index, and little finger, were freely moveable; a slight movement was also perceptible in the tendons of the fourth finger, and even in the last phalanx of the middle finger, when the patient made an effort to extend them. It seemed that the disease was confined to the bone; the soft parts did not participate in it; and between the tuberculated masses, the tendons and muscles could be distinctly felt, though they had considerably wasted, in consequence of the pressure. The subcutaneous veins were varicose; the skin was tense, shining, and in some places adherent to the tumour, which had of late become very tender, and the patient was almost unable to let the hand hang down, on account of the violent pain it caused. Doctor Von Walther, under whose care he was, considered the case as one of exostosis maligna (according to Scarpa's nomenclature), and decided upon removing the third and fourth fingers, and their metacarpal bones; and, if necessary, the index, and its metacarpal bone also. The operation was performed on the 24th of July, in the following manner: The hand being held

in supination, Doctor von Walther, with his left hand, seised the index, and pressed it as much as possible exteriorly, whilst an assistant drew the three other fingers and the tumour, in an opposite direction; an incision was now made between the metacarpal bones of the index and middle finger, as near as possible to the latter, in order to prevent the denudation of the metacarpal bone of the index, which, however, could not be avoided at its carpal extremity, where the tumour was firmly pressed towards it. Another incision, parallel to the first, having then been made between the metacarpal bones of the fourth and little fingers, both incisions were united by a transverse one, over the middle of the metacarpal bones, first on the back, then in the palm, so that after dissecting off the skin towards the carpus, a quadrangular flap was turned back on both sides, and the carpal joint laid bare; this was divided without any difficulty, and the tumour thus removed. The metacarpal bone of the index, as was mentioned before, had at one part been unavoidably laid bare; its articulation with the carpus had also been wounded during the operation; and Doctor von Walther accordingly decided upon removing the upper third of the bone, especially as it was expected that the flaps would then be more easily brought together. The carpal joint was accordingly divided; and an incision having been made between the metacarpal bone of the thumb and index, the upper third of the metacarpus of the latter, removed by the saw. Eleven arteries were tied; the ligatures were cut off close to the knot; the flaps were brought together, and kept in contact by means of adhesive plaster, and a bandage. About an hour and a half after the operation, secondary hæmorrhage occurred, which ceased, however, after the application of four ligatures. Towards the evening, the patient was bled to fourteen ounces; he passed a good night, but on the following morning complained of violent pain shooting up the elbow; the carpal region was red and swollen, and the fever was rather high. He was again bled, had eighteen leeches applied to the forearm, and took a saline mixture, with the nitrate of potash; towards the evening, the pain and febrile excitement not being lessened, he was bled a third time. After this, and a copious evacuation, he was much better; and on the following morning the fever had greatly subsided; the swelling in the carpal region had become larger, and was rather tense. On the 27th, slight fluctuation was felt in it, and it was covered with a poultice. On the 28th, the dressings were removed for the first time; the wound was of healthy appearance, and had, in several places, united by the first intention; suppuration was moderate, and of a laudable kind. During the following days, the swelling at the carpal region gradually subsided, and the purulent matter, which had apparently formed in it, seemed to be discharged through the wound. It was not observed that any of the knots came away; and it appears that most, or all of them remained enclosed in the granulations. Towards the middle of September, cicatrisation had become complete, and the patient was discharged perfectly well. The index was contiguous, and, at its upper part, adherent to the little finger; the thumb was perfectly free and moveable; the index was stiff, and the movements of the little finger were also rather confined.

After some months, however, when Doctor von Walther saw the patient again, the little finger could be freely moved; and even the index appeared to have, in some respect, recovered its mobility; there was no visible trace of re-production of the disease in any of the fingers, or metacarpal bones. On examination of the removed parts, by Professor Weber, the nerves, vessels, tendons, and muscles round the tumours, were found healthy, though rather wasted; the periosteum was also thinner than usual, and had more the appearance of a cellular, than of a fibrous membrane. The degeneration consisted of a morbid enlargement of the first and second phalanges, and the metacarpal bone of the middle, and of the first and second phalanges of the fourth finger. It was entirely confined to the middle portion of these bones, the extremities and articulations of each of which were free from disease; the extreme portion of the tumours consisted of a thin osseous capsule, which contained a very vascular cellular tissue, the cells of which were filled with extravasated blood and gelatinous matter, similar to marrow. In some parts of the cellular mass there were traces of incipient ossification. The tumour of the metacarpus of the middle finger consisted almost entirely of osseous substance; and its external portion, in the palm of the hand, exhibited traces of a fracture, the fragments of which protruded into the mass of the tumour. The other tumours exhibited nothing of peculiar interest; no trace of the medullary canal remained in any of the diseased bones.—*Graefe und Walther's Journ.*

ON THE PROPHYLACTIC POWERS OF EUPHORBIA VILLOSA IN HYDROPHOBIA.

The above plant has, in Volhynia, Podolia, and Galizia, and in the greater part of Russia, for many centuries been so generally used as a preventive of hydrophobia, that we think it worth while to extract the following passage on its employment, from a recently-published work of Dr. Karnowsky, of Warsaw;—The fresh root, about six inches in length, is cut into small pieces, and infused in a pint of cold water; the vessel is then carefully covered, and put in a warm place for twelve hours. Of this infusion, the patient takes three ounces before breakfast, and nearly the same quantity at bed-time; it is afterwards continued for three days, but in smaller quantities. The immediate effect consists in vomiting and copious evacuations, which it is asserted are invariably produced in those who have been infected, whilst they are hardly ever observed in those who have escaped the contagium. An empiric in Podolia, who is famous for his prophylactic cures of hydrophobia, uses a decoction made by boiling a pound of the root in four pints of water to a pint, of which a robust man takes on the first and third day, from four to ten ounces in one dose before breakfast, and on the intermediate day the same quantity in two doses; individuals of a weak constitution take a smaller quantity, and only on one day. On the ninth day one dose is repeated. The effects are similar to those above mentioned; and it is stated to be a certain sign of perfect security, if the remedy produces no immediate effect on the digestive organs. By this treatment he promises to guard every one from hydrophobia, who will apply to him on or before the sixth day after the bite. After this period he will hardly ever undertake the care of a patient, as, according to his experience at this time, the sublingual vesicles have suppurated and broken; if the inspection of the mouth convinces him that this has not yet been the case, he recommends the use of gargle made from the above decoction, in addition to its internal administration. The vesicles are stated to appear on the third day, and to become confluent on the sixth; in men they are of the size of a millet; in ruminants, of that of a hemp-seed. Every vesicle should be opened by a red-hot wire, and the mouth immediately washed with brandy.—*Journ. der Chir. u. Augenheilk.*

EXTENSIVE WOUND OF THE FACE.

B., a soldier, aged 32, of a nervous temperament, attempted to commit suicide on the 4th of March, 1823, by shooting himself with his musket; on hearing the report, some persons immediately hastened to the spot, where they found him lying on the floor, and bathed in blood. Although he seemed to be lifeless, he was immediately carried to the hospital, where the surgeon in attendance only applied a simple dressing, and two hours after the accident, M. Larrey found him in the following state:—In the left ramus of the lower jaw, nearly half an inch from the chin, there was a large irregular aperture, by which the ball had entered; it had made its way through the lower and upper jaw, the left nasal cavity and orbit, and had come out at the left side of the root of the nose; the jaw-bones were crushed to fragments, part of the tongue was lacerated, the lower parietes of the orbit fractured, and the eye had burst the eyelids; the nose and upper lip were torn into several flaps, the lachrymal and frontal bones fractured, and the soft parts round the aperture by which the ball had entered, destroyed to a great extent, with a considerable loss of substance. He had lost a great quantity of blood, and was in a state of insensibility and prostration, which seemed

to indicate concussion of the brain. The extremities were cold, and the pulse imperceptible. The aperture, by which the ball had entered, was enlarged, several fragments of the maxillary bones were extracted, and the soft parts which were disorganised, were removed. The two principal fragments of the lower jaw were brought as much as possible into contact, and kept in *situ* by means of a platina wire fixed to the third molar and the incisor teeth, and the principal fragments of the upper jaw-bone were treated in the same manner. A great number of sutures were then applied to the lip, nose, and cheek, and the soft parts maintained, as nearly as possible, in their natural position; an elastic catheter was introduced into the left nostril, and the whole covered by a retentive bandage. The patient being quite unable to swallow, wine and chicken-broth were injected through the tube in the œsophagus; ice was applied over the head, and sinapisms to the feet, and as after a short time symptoms of cerebral congestion appeared; blood was taken from the temples, arm, and foot. Under this treatment, the most dangerous symptoms gradually subsided, and the patient, within a few days, enjoyed some hours' tranquil sleep. From this period, he gradually improved; purulent discharge began to manifest itself; the bandage was not, however, removed, the external pieces only being changed, and it was not before the fourteenth day after the accident, that the dressings were entirely renewed; most of the sutures were then found united, except at the internal angle of the eye, and at the root of the nose. The non-united part of the wound was simply dressed, and a great number of exfoliated osseous fragments were extracted; the disunited parts became gradually approximated, and in April, 1824, the patient was discharged cured, though in a state of idiotism. On the 24th of April, 1824, he was presented to the surgical section of the Academie Royale in the following state:—the eyelids of the left eye were in contact; the nose had almost recovered its natural form, except at its root, and at the internal angle of the eye, where there was a large aperture, by which the meatus were laid open; the wound of the upper lip had perfectly united; the third molar was almost in contact with the second incisor tooth; the fragments of the lower jaw were firmly united, but the left horizontal branch had become half an inch shorter than the right, and the articular extremity of the bone was dislocated on the pterygoid muscle; the fragments of the upper jaw-bone had also united, without any intermediate substance; the tongue had nearly recovered its natural shape, and the patient could make himself pretty well understood. The large aperture in the bony palate had become much smaller, and appeared to be still diminishing.—*Larrey, Clin. Chirurg.*

CHEMICAL COMPOSITION OF THE ERGOT OF RYE.

According to the researches of M. Maas, a German chemist, the ergot of rye does not contain any amylum, but consists, for the greater part, of gluten, a colouring violet substance, resinous matter, fixed oil, and an alkaline principle, which appears to be combined with acetic acid. The alkali is either ammonia, or a peculiar alkaloid. As to hydrocyanic acid, morphine, narcotine, and phosphoric acid, all of which have been asserted to form part of its composition, M. Maas never could find the least trace of either of these substances.—*Kastner. Archiv. fur d. g. Naturl.*

HOPITAL DE LA CHARITE.

CASE OF GANGRENE OF THE ABDOMINAL PARIETES, AFTER LABOUR.

—Minat, aged 38, of rachitic constitution, and with considerable curvature of the lumbar portion of the spine anteriorly; had three years ago, been delivered of her first child by the forceps. Ten months ago, having become pregnant for the second time, she suffered much from the uterus being forcibly pushed anteriorly, so as almost to hang over the pubis. Towards the end of pregnancy the abdominal muscles were much compressed, and had evidently become attenuated; the skin over them was covered with purple blotches, and the right labium was much swollen, so as almost to prevent the introduction of the hand into the vagina. After a long and ineffectual labour, Dr. Capuron, who was called in, tried to apply the forceps, but without success, so that he was obliged to perforate the head. After labour the patient was affected with incontinentia urinæ; puerperal peritonitis soon acceded; under the symptoms of which, the lower portion of the abdominal parieties became violently inflamed, and at last gangrenous; a fortnight after delivery, a large escbar having come away, the intestines were completely laid bare, and a quantity of turbid serum escaped through the wound. On the 10th of March, seven weeks after delivery, the patient was brought to the hospital; at that time she did not suffer much, except from the continual discharge of urine; the abdominal parieties were completely loose and hanging over the pubis; there were two large apertures separated by a very small band; the intestines were denuded to the

extent of about eight square inches; the navel, it appeared, had come away with the eschar, at least there remained no trace of it; the edges of the wound were dark-red, and adherent to the small intestines, the surface of which was covered with granulations. It was impossible to ascertain the cause of the incontinentia urinæ, on account of the extreme tenderness of the external genitals. The general health of the patient was not much affected, cicatrisation appeared to be going on and a favourable termination of the case was anticipated, up to the 22nd, when the patient seemed to be worse than usual; the fever was rather high, the tongue red and parched, the pulse frequent and very small; the wound was covered with thin purulent matter, and it was feared that she would soon die exhausted.

MELANOTIC FUNGUS IN THE ORBIT.

EXTIRPATION.

R., ætat. 61, of a broken constitution, about forty years ago received a wound in the left eye, in consequence of which the tumours and the crystalline lens having been evacuated, the eye had collapsed, and become atrophic. About nine months before his admission, he became subject to violent pain in the left superorbital region, and to repeated hæmorrhage from the orbit. After six months, these discharges of blood became more frequent and profuse, in consequence of a fungous tumour, of a dark brown colour, having began to protrude from the orbit. On his admission, on the 23d of March, the fungus was about the size of a crown-piece, depressed in its middle, with an uneven surface, of black colour, and soft consistence; it did not cause any pain, even on touching it, but bled very easily. It followed the movements of the right eye, and the eyelids appeared to be healthy; the globe of the atrophic eye was pushed towards the external canthus. On the 27th of March, the tumour was removed, in the following manner: the eyelids having been divided at their external angles, were dissected from the fungus, which was taken hold of by a pair of forceps, and removed with the remains of the globe; the orbit was filled with lint, and covered with compresses. On examination of the tumour, it was found to consist of a homogeneous mass of soft, almost gelatinous consistence, from the tissue of which there exuded a black fluid, similar to the pigment of the choroid, its origin was found to have been the anterior surface of the conjunctiva, beneath which the atrophic eye was found perfectly healthy, as well as the muscles, cellular tissue at the bottom of the orbit, and optic nerve. The sclerotic was considerably thickened, and the choroid firmly adherent to the retina; the greater part of which was ossified. The centre of the organ was occupied by a small quantity of thick gelatinous, and almost transparent, mass.—*Lanc. Franç.*

HOTEL-DIEU.

LITHOTOMY BY THE RECTO-VESICAL OPERATION.

C. ætat. 32, of a lymphatic constitution, was admitted in the month of March. He had, from his 20th year, been suffering under the symptoms of stone; the presence of which, in the bladder, was readily ascertained by M. Dupuytren, who convinced himself that the calculus was very large, and almost immoveably fixed in the right half, and near the neck of the bladder. Under these circumstances, M. Dupuytren decided upon performing the recto-vesical operation, according to M. Sanson's method, as, in his opinion, neither by the lateral, nor the bilateral operation, could the incision be made large enough; the stone being, besides, fixed on the right side of the bladder, contraindicated, in some respect, the lateral operation; and in the bilateral section, by the least deviation of the lithotome, (a circumstance which was not at all unlikely to occur, from the situation of the stone) the arteria pudenda might be wounded. The high operation was impracticable, if, as it was presumed, the stone was fixed. The operation was performed on the 7th of April, in the following manner: the patient being placed in the position for lithotomy, Mr. Key's staff was introduced; the operator now carried a bistoury into the rectum, and having divided the sphincters, made an incision through the middle of the perineum, so as to reach the staff, on the groove of which he now divided the prostate, neck of the bladder, and rectum. This part of the operation lasted only about two minutes. A pair of forceps was now introduced; and the stone readily grasped; but all attempts to extract it proved ineffectual, until it was broken into pieces, which were removed without any further difficulty. No part of the stone appeared to be left, when M. Dupuytren, on examination, felt, in the posterior right portion of the bladder, a piece, which seemed to be immoveably fixed, although it could be felt free in the greater part of its circumference; he supposed it to be a calculous concretion in the ureter, and eventually, though not without some effort, succeeded in extracting it. The operation lasted between twenty and thirty minutes, and was performed with great precision: there was hardly any hæmorrhage, but the patient appeared to suffer considerable pain.

M. Dupuytren ordered leeches to the perineum, and a warm bath. Soon after the operation, symptoms of peritonitis and cystitis acceded, under which the patient died, on the morning of the 11th, four days after the operation. On examination, the incision was found to commence at the bulb, and to extend to about two or three lines from the peritoneal fold, between the rectum and bladder. The rectum, and cellular tissue round the neck of the bladder, were inflamed. In the left side of the bladder, below the ureter, there was a sacciform enlargement, into which the finger could be passed for some distance, and where, probably, part of the stone had been lodged; its surface was inflamed and ulcerated. A similar dilatation, though not so large, was found in the left side of the bladder. The right ureter was contracted, and the kidney atrophic; the left kidney was enlarged, and the ureter dilated. The peritoneum was inflamed, and contained a great quantity of turbid serum.

The fragments of the stone were not weighed; altogether they appeared to equal in size a large hen's egg.

WESTMINSTER MEDICAL SOCIETY.

April, 1830.

The meetings of this society closed, for the season, on the 24th: the subjects discussed on the last two evenings, were syphilis and apoplexy, but the debates yielded nothing worth recording. Scarcely a dozen members have latterly been accustomed to attend.

MEDICO-BOTANICAL SOCIETY.

The members of this society held their annual dinner at the Thatched House Tavern, on Saturday last, Earl Stanhope, the president, in the chair. Many complimentary toasts were drunk, followed by brief speeches from Sir James M'Gregor, Drs. Roupell, Whiting, Short, Sigmond, &c. but they did not contain any thing of particular interest to the profession. The condition of the society was, throughout alluded to as very prosperous. The evening was spent with considerable enjoyment, and the company did not finally separate until twelve o'clock. It is worthy of remark, that two toasts intervened between the "College of Physicians," and the "College of Surgeons," the former having been given first, and being followed by that of Sir James M'Gregor and the Professors of the Society. The College of Surgeons was drunk subsequently to all the chief toasts of the evening.

HYDROCYANIC ACID IN NEURALGIA.

By Forbes Winslow, Esq., *Surgeon.*

I have read with pleasure the account of two cases recorded in your last number, in which M. Rayer, of St. Antoine, has been administering the essential oil of turpentine with partial success, in neuralgic affections. Of this remedy I cannot give any opinion, never having tried its effects, but I believe it is a remedy employed by the German and American physicians, in affections of this nature. I had an opportunity of witnessing, some months ago, the beneficial effects of hydrocyanic acid in a case of neuralgia; and with a hope of exciting the attention of medical practitioners, who may have cases of this description under their care, to this remedy, I shall briefly relate the case.

M. B., æt. 31, of a sanguine temperament, applied to me labouring under a violent neuralgic affection of the left side of the face. By the urgent solicitation of the patient, who imagined the pain to originate thence, I was induced to extract a decayed tooth, but no relief arising from this, I administered many of the usual remedies, narcotics, carbonate of iron, etc., and abstracted blood locally from the part by the application of leeches, but without avail. The patient's sufferings were of the acutest description, enjoying but little relapse from the excruciating pain. A medical friend to whom I mentioned the case, suggested the propriety of trying the effects of hydrocyanic acid, and I was accordingly induced to do so. I first administered two ♏ of the *medicinal* acid every four hours; this produced no relief. The dose was then increased to four ♏ every fourth hour, and by paying particular attention to the state of the digestive organs, which were very much disordered, the patient, by the fourth day, after the administration of the acid, had perfectly recovered.

This is the only case in which I have administered the hydrocyanic acid; whether it is deserving the name of a remedy for this painful disease, further experience only will satisfactorily testify. But judging from the speedy relief which its administration afforded in this case, I should think it not unworthy the attention of those practitioners to whose care patients suffering under these affections may be confided.

16, York Street, Portman Square,
April, 1830.

CASE OF IMPERFORATE ANUS.

By Henry Meymott, Esq. M.R.C.S.

The wife of a labouring man was put to bed by a midwife, of her third, a fine female child, on the 13th of March. The labour, I

was informed, was natural. The next morning the child was brought to me for advice. On examination, a depression was found just at the point of the os coccygis; but there was no opening in the skin: the vagina was also imperforate; but the existence of a meatus urinarius, somewhat below the usual situation, was ascertained by the passage of the blunt end of a probe, although no water was ever observed to pass. The little patient appeared to be suffering very much, and refused the breast: the abdomen was greatly swollen, and very tense; there was also repeated vomiting; and efforts to relieve itself by straining, as though it wished to pass something backwards. As the only probable chance of saving the child's life, I decided at once upon an operation, notwithstanding that Dr. Blundell, in his lectures, as reported in THE LANCET, recommends waiting a few days, or even weeks, until the gut has become more distended; and this, principally, because it might so chance that the surgeon is unskilful; a reason for withholding the use of the knife, which is, I think, untenable in this, or in any other operation, there being abundance of difficulties to anticipate in laying down rules for operating, without inventing such an excuse as the possibility of the operators incapability, from whatever cause, of adhering to those rules. The child being held by an assistant, nearly in the same position as that recommended for the operation of lithotomy, I made the external incision, commencing at the depression at the point of the os coccygis, about an inch in length, towards the vagina, and continuing it cautiously upwards, in a perfectly straight direction, and inclining the scalpel backwards, at the same time, in the direction of the median line of the os coccygis and sacrum, the point of it penetrated the gut, at the distance of full two inches from the external artificial opening, which circumstance was ascertained by the somewhat sudden escape of the meconium: a tent of lint, well oiled, was then inserted, and two tea-spoonfulls of castor oil ordered to be given immediately: the exit of the meconium appeared to give relief: very little blood was lost. During the time the child lived, which was 76 hours after the operation, a moderate-sized urethra bougie, covered with oiled lint, was passed, from time to time, and suffered to remain in a short while, in order to keep the parts properly dilated; but the bowels were but sparingly acted upon, although castor oil and calomel were retained for a considerable time. The vomiting, which was never effectually stopped, was somewhat relieved by a carminative; and friction with castor oil allayed the tenseness of the abdomen in a slight degree. It may be worthy of remark, that on the 2nd day after the operation, the child vomited, to all appearance, pure bile from the mouth, and also through the nostrils; and the skin about the face and neck was considerably tinged: whether the effects of the action of 3 grs. of calomel promoted its absorption, I will not affirm; but the next day the skin was of nearly its natural colour. The mother was subject to bilious complaints. No post-mortem examination was allowed.

Ludlow, April, 1830.

NEW METHOD OF TREATING RANULAS.

By G. SMITH, Esq., Surgeon, Barnsley.

HAVING been a constant reader of THE LANCET from its infancy, and knowing the great influence it has in the surgical world, I have sent for your insertion the result of a case of ranula, which I trust you will give a place in an early Number, that others, who may meet with this formidable disease, may make trial of the same remedy which has in my hands been so peculiarly successful.

The true nature of ranula being well understood by every one who has studied surgical pathology, I should consider a description of it a misappropriation of your invaluable pages, as its characteristic features are to be met with in every surgical work, ancient and modern. However much Fabricius differed in the pathology of this disease from the writers of the present day, his mode of treatment was, in every respect, similar; yet it cannot be denied, that an accurate diagnosis of a disease must be clearly ascertained before we can ensure success, either by the knife, or by medicine. All authors whom I have consulted, have uniformly had recourse to an operation, either in the form of puncture, incision, or extirpation, which latter mode is seldom had recourse to, even by the most experienced operators, from the many important parts connected. Fabricius supposed that ranula was an encysted tumour of the meliceris kind, and, consequently, thought nothing short of extirpation would effectuate a radical cure, although he generally contented himself with opening the tumour its whole length, from the great danger of a fatal hæmorrhage in extirpation.

M. Dupuytren, who has contributed so much to the advancement of surgery, records a case in the *Répertoire Général d'Anatomie*, of a soldier, on whom he performed the operation in the following manner: having made a small opening into the tumour, he introduced one end of a tube, or cylinder, four lines in length, and two in breadth, with a small plate on each end to retain it into the cavity of the tumour, through which

the contents escaped; this case, M. Dupuytren says, was completely cured in fifteen days.

In The Lancet, No. 323, Dr. Graefe states his having performed the operation (incision) on three patients with complete success, which method, I consider, is a revival of Fabricius's operation, using concentrated muriatic acid, instead of the mercurial solution, by M. Le Clerc.

From the true nature of ranula, I should conclude that the operation of evacuating the contents of the tumour in any form whatever, is only a palliative; it is treating the effect, instead of removing the cause. Do we anticipate a radical cure of ascites, when we perform the operation of paracentesis abdominis? Or can we ensure a successful result in trephining for hydrocephalus? A re-accumulation is inevitable; to establish a fistulous opening, as in a case related by M. Louis, is the only chance of a permanent cure by operation.

December 16th, I was consulted by Mr. M., who wished my advice relative to a tumour under his tongue; says he first observed it eleven years ago, but within the last two years it has attained an alarming size, causing great difficulty of breathing, particularly in the night, pressing the tongue into the fauces, and threatening instant suffocation; it occupies the whole concave space of the lower jaw, projecting posteriorly over the molar teeth on both sides, rendering mastication extremely painful; discharges a thick viscid matter, which, during the night, passes into the stomach, producing nausea, sickness, want of appetite, diarrhœa, &c. From the good effects which I have repeatedly observed of the preparations of iodine, in glandular swellings, and tumours in the different organs of the human body, I resolved on giving it a trial in this disease, and report, through the medium of your widely-circulated Journal, the results of my experiment with this pharmaceutical engine. Considering this a favourable opportunity for the trial of a remedy which has in my hands, repeatedly, more than realised my most sanguine anticipations, I explained to my patient the nature of the disease, with the only hopes he had of being relieved, viz., by an operation; but that as the operation was of itself painful, I was willing to try the effect of medicine before I decided on it. To this he readily consented. I ordered tinc. of iodine twelve drops night and morning, to be increased gradually if it produced no disagreeable sensation in the stomach; when he had arrived at thirty drops three times a day, he said he felt his appetite improve, nights less restless, stools regular, countenance cheerful, and could easily observe the tumour diminishing; of this I was doubtful, as he had only been under the influence of the medicine four weeks; not willing to increase the dose, in the beginning of February I was agreeably surprised to hear, that his speech, which formerly was only a hoarse murmur, was now quite distinct; that he could masticate freely; that the discharge was gone, and that the tumour was reduced from the size of a duck's egg, to a mere flat and easy compressible puffiness, causing no uneasiness whatever. By a continuance in the use of the tincture a few weeks longer, I have no hesitation in expressing my belief, that the disease will be totally eradicated.

I have a case, at present, of enlarged tonsils, in a boy about six years of age, which I am treating with the iodine tincture, the results of which I shall forward to you.

MEDICAL DINNER.

To the Editor of The Lancet.

Sir,—I am induced, by an article in last week's Lancet, to acquaint you, that I had nothing to do with the selection of toasts for the proposed dinner; and that I did not attend those meetings at which the toasts were determined on.

It may not be superfluous to inform you, that prior to the publication of the article referred to, I had declared my intention to resign all connexion with the dinner.

I am, Sir, your obedient servant,

W. A. Walford.

Speldhurst Street, Burton Crescent,
April 26th, 1830.

EDINBURGH ROYAL INFIRMARY.
MR. LISTON.

April 21st.

One of the most respectable meetings of medical students ever held in Great Britain, took place in Dr. Knox's class room, on Saturday, the 17th instant, relative to Mr. Liston's arbitrary measure, alluded to in our last. Mr. Cheek, the president of the Medical Society, presided. An extremely temperate and judicious address was unanimously voted to the managers, and signed by 127 pupils of the house, out of which number, a moiety, at least, are either surgeons, or candidates for the medical degree.

The memorial was presented to the managers on Monday the 19th, and was received with the utmost courtesy. A reply was promised, when the matter shall have been taken into consideration.

MR. WALLER'S ANNUAL OBSTETRICAL PRIZE.

A numerous assemblage of students took place in the Theatre of the Aldersgate St. School, on Saturday, the 24th instant, to witness the adjudication of the above prize, which consisted of an elegant set of transfusion instruments, contained in a mahogany case, with a suitable inscription engraved on the brass-plate. Mr. Waller conducted the examination, and Messrs. Watson, Doubleday, and Rushforth (medical practitioners), were present, to decide on the merits of the respective candidates. After a contest, which lasted upwards of four hours, Mr. W. J. E. Wilson, of Greenhithe, Kent, was declared the successful candidate. The manner in which the questions were answered, reflected equal credit on the students, and their preceptor.

[We heartily wish that the plan of rewarding attentive pupils, which is adopted by all the teachers of this school, was more generally followed; but, at the same time, the utility of such exhibitions, would be much enhanced if the questions were proposed by any other persons than the lecturers themselves. An examination conducted by the preceptor himself, in the presence even of the public, cannot, we apprehend, in many instances, be looked upon as an eligible means of ascertaining the abilities of the examined. In the various prizes that are about to be distributed at this season of the year, this hint will be found deserving of attention.—ED. L.]

BOOKS RECEIVED FOR REVIEW.

A Letter to the Members of the Temperance Society, showing that the use of Tea and Coffee cannot be safely substituted for that of Spirituous Liquors, and proposing for their adoption a rule of diet, from which those substances are excluded. By James Henry, M.B., &c. Dublin: Hodges and Smith. 1830. pp. 59.

A Letter to William Lawrence, Esq., on the Nature and Causes of Intellectual Life and the Mind. By W. Addison, M.R.C.S. London: Underwood. 1830. pp. 55.

Plain Instructions for the Management of Infants, with Practical Observations on the Disorders incident to Children. To which is added an Essay on Spinal and Cerebral Irritation. By John Darwall, M.D., Physician to the Birmingham Dispensary. London: Whittaker and Co. 1830. pp. 244.

On Broken Knees, and their treatment; with some account of a new operation. Also, Observations on the effects of temperature on the skin, and on the treatment of horses' feet in the stable. By F. C. Cherry, Vet. Surg. to the King. London. Simpkin. 1830. pp. 24.

The Farrier and Naturalist; and Horseman's Chronicle. Vol. II. London. Simpkin. pp. 392; and the Nos. to April 1830.

TO CORRESPONDENTS.

"Miss Brown begs to acknowledge the receipt of the note left at THE LANCET Office, and announced in the number for April 17th, as handed to Dr. Copland; and she sincerely thanks Mr. Peskett for its contents."

"April 27, 1830."

Inquirer, Inceptor, F. B., and many others. There are so many colleges, and so many regulations with respect to expense and terms of study, that nothing less than a tabular view of the subject would convey a clear idea of it. We may, however, state, that the graduation fee in Edinburgh University is, in round numbers, twenty-four guineas, exclusive of from three to four pounds for the printing of a Thesis, and a guinea for Janitors' fees. The price of the ten tickets now necessary for the diploma, is about forty guineas; and the time spent in taking them out, four years; with some exceptions, however. As to giving our correspondents an account of the expenses of medical education and graduation in the three schools of Dublin, it would be quite impossible to attempt doing so without devoting more space to the subject than we can afford; it is rendered unnecessary also by the fact, that the terms and expenses of the Scotch, Irish, English, and Parisian schools and hospitals, are to be found in most of the little works called Medical Students' Guides, or Calendars.

The paper signed *Veluti in speculum* was destroyed, or it should have been returned.

The letter of *W. F.* is an advertisement.

Our correspondent from Doncaster in communicating to us the particulars of the supposed hernia case, must send us, in confidence his name and address.

The letter of Mr. Hawkes was mislaid. It shall appear next week.

A note lies at THE LANCET OFFICE for Mr. Bottomley. Shall it be forwarded to Mr. B.'s address?

J. L.—Reformer—R. Y.—B. C. R.—and several others, allege that the Old Hags of Rhubarb Hall are, at this time, practising upon their unfortunate dupes a system of extortion, by demanding, under the threat of a lawyer's letter, the "*additional fee* for the town certificate." We have only to say, that the Act of 1815 does not authorise the demand.

ERRATUM:—No. 346, p. 77, col. 2, line 38, for "cuticular" read "auricular."